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The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

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WHY
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PINE POLES
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Crude Situation May Improve Quickly

Highest daily average estimated total production in 1928, week ended Dec. 29, 2,585,844 bbls. Lowest in 1928, May 19, 2,338,241 bbls.

Far Reaching Effect Probable From Inauguration of Conservation Plan in Oklahoma and Action of Institute

By Andrew M. Rowley

Highest daily average estimated light oil production in 1928, week ended Dec. 29, 2,158,134 bbls. Lowest in 1928, Mar. 3, 1,927,713 bbls.

Definite improvement in the crude oil overproduction situation may be expected almost immediately as a result of the inauguration this week in Oklahoma of the conservation plan to hold production in that state to about 650,000 barrels and the action of the board of directors of the American Petroleum Institute in pledging themselves as executives of oil companies to use their full powers through all legal co-operative methods to prevent the development of overproduction with its attendant waste. Production in Oklahoma should register some decrease during this week and a substantial reduction from the present average probably will be shown in figures for next week when the conservation plan has had a full week of operation. The influence of members of the board of directors of the institute should be felt soon in other sections of the country.

If the Mission Pool in Oklahoma is opened and included in the curtailment plan with production of the state still held down to approximately 650,000 barrels daily, the only section east of California where an increase in production may be expected is Kansas. It is not probable the development in Kansas will be such as to prove much of a menace to the general situation. Consequently, the only section where present developments may prove troublesome in efforts to solve the overproduction problem is California.

The setting in motion by the executive committee of the American Petroleum Institute of a plan looking towards holding production of crude oil in South America and Mexico, as well as in all areas of the United States, to market requirements, will have a far reaching, beneficial effect.

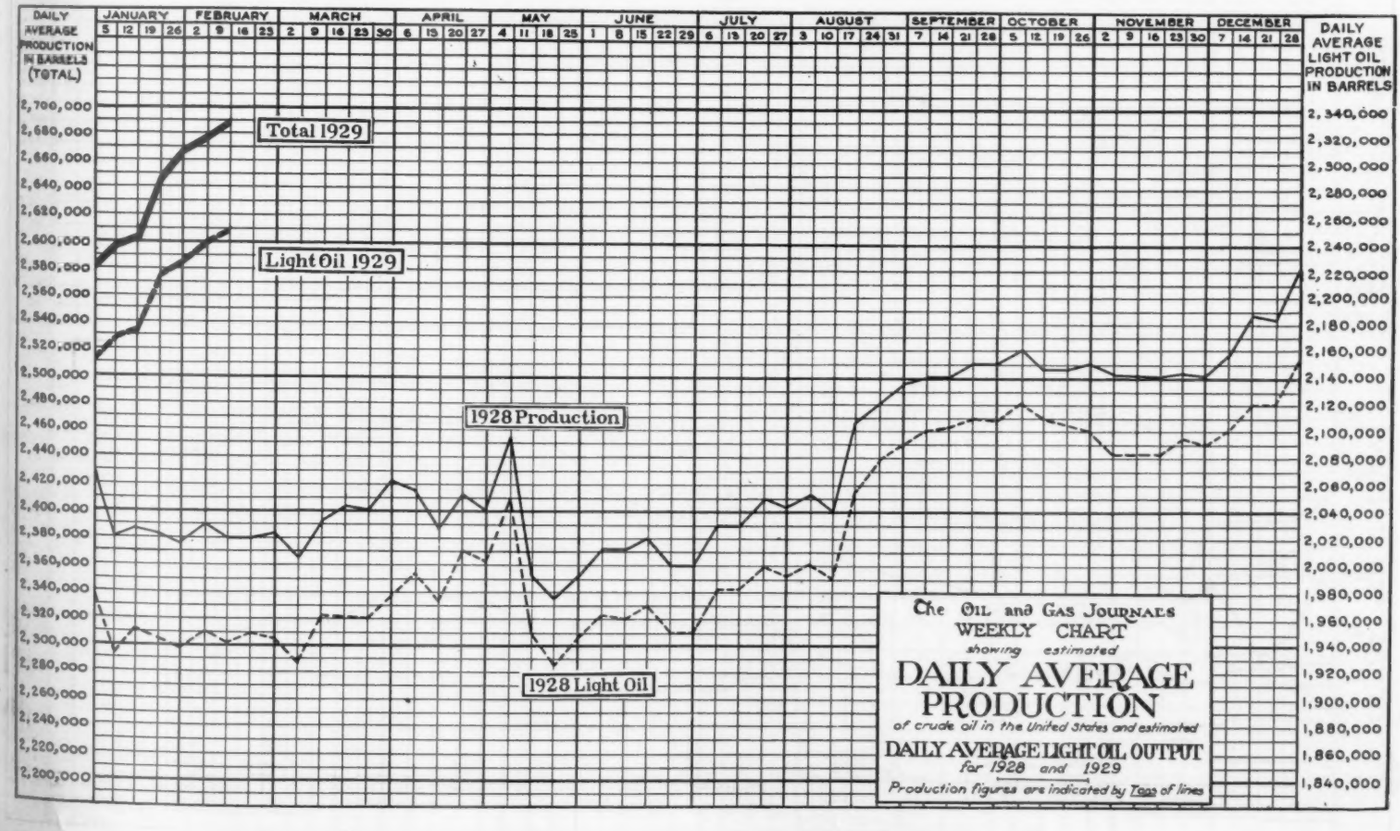
Making the conservation program cover not only every section of the United States but also those countries which contribute most to our crude oil imports, which enter into direct competition with the output of several areas of this country, will remove any logical objection any operator may have to curtailing his production in this country.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended February 9, and a comparison with the previous week follows:

	Feb. 9		Feb. 2	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	10,890		10,945	
Burbank	22,940		22,920	
Other Osage Fields	25,970		26,010	
St. Louis-Pearson	128,865		131,430	
Cushing and Shamrock	20,545		20,580	
Bristow	18,935		18,970	
Allen	28,930		29,460	
Seminole	297,985		294,770	
Northern Miscellaneous	115,370		115,640	
Southern Fields	57,390		57,620	
Total Oklahoma	727,820		728,345	
West Texas—				
Hendricks	169,021		177,251	
Yates	82,561		74,029	
Remainder	123,767		121,919	
Total West Texas	375,349		373,199	
North Louisiana	30,325	5,390	30,375	5,550
Arkansas	25,930	51,300	26,355	51,050
North Central Texas	137,336		136,921	
Texas Panhandle	56,915		59,085	
East Central Texas	21,556		21,529	
Kansas	95,585		96,610	
Total Mid-Continent Area	1,470,816	56,690	1,472,419	56,600
Gulf Coast		142,649		139,775
Southwest Texas		50,262		50,037
Eastern	110,000		112,000	
Rocky Mountain Area	72,683		71,904	
California—				
Santa Fe Springs	188,000		177,000	
Long Beach	177,000		179,000	
Torrance	2,000	13,250	2,000	13,500
Huntington Beach	47,500		47,500	
Elwood	23,000		19,500	
Inglewood	16,000	11,000	16,000	11,000
Ventura Avenue	54,500		55,000	
Seal Beach	30,000		29,000	
Remainder of State	58,000	167,000	59,000	167,000
Total California	596,000	191,250	584,000	191,500
Total United States	2,249,499	440,851	2,240,323	437,912
Grand Total	2,690,350		2,678,235	

→ **Total Increase, 12,115 Bbls.; Light Oil Increase, 9,176 Bbls.** ←



Prices Believed to Be Near Bottom

Jobbers Expected to Enter Market to Build Up Gasoline Stocks. Kerosene Strengthened by Export Inquiries. Wax in Temporary Slump

By W. T. Ziegenhain

Belief that better prices were in store for Oklahoma refiners within the next month led many to pass up substantial orders for gasoline rather than meet the low prices being quoted in West Texas. Gasoline prices continued to ease off and material could be purchased from the large refiners on the open market below 7 cents, but there was no material located moving from the Oklahoma area at the 6¼-cent price accepted as the going market in West Texas. This has called for a material increase in the Oklahoma stocks but this has not proven a handicap and there is a general feeling that as soon as the market becomes settled, there will be a number of jobbers entering the market with orders to fill their storage. This is strengthened by the fact prices are now considered to be as low as they will go for several months at least and after that, the increase in the consumption should allow prices to be advanced. Thus the answer to the question resolves itself into a guess regarding the future.

Kerosene was traded more activity and prices were slightly higher as the week closed. The long severe winter in all sections of the country has occasioned a drain on jobbers' stocks and with much of the refinery kerosene production being turned into distillate the coming spring demand presents a most optimistic situation regarding the kerosene market. In addition to this there were several export inquiries during the past week which might develop into business over the next few days. An order for 150 cars given by a large refiner also helped to strengthen the belief that kerosene is due for a substantial increase in price.

Natural gasoline prices have been well established at their present level through purchases by manufacturers who refuse to sell at anything under the present market, storing their excess production after taking any material offered on the open market. One of the larger companies is said to be storing from 800 to 1,000 cars of gasoline per month but they continue to be active buyers whenever the market shows a tendency to slow up.

Increases in the amount of natural gasoline going to the Gulf has resulted over the past 10 days and this has helped to stabilize prices at their present level also. Manufacturers also contemplate a very good movement over the balance of the month. Refiners have seen their own market slip to a lower level and withheld purchasing their needs of natural gasoline, believing that market would take a similar loss. Coupled with this was the fact this time of the year natural gasoline prices usually sag to a low mark. A year ago prices were 1½ cents lower than at present, indicating the present relatively favorable position. Some manufacturers are so optimistic about the outlook for the balance of the month as to predict an advance, but most of them expect prices to simply remain as they are.

Distillates continue to move at a very favorable rate, several refiners having withdrawn from the spot market. The light grades have proved particularly popular and these have commanded a premium. The long, severe winter has kept jobbers' stocks at a minimum and, whereas a decline in purchases was usually shown soon after the first of February each year in the past, the orders have been coming in, in greater numbers, indicating that jobbers' stocks have been depleted and the demand is coming direct from consumers. But this situation would change over night and for that reason refiners are not making any special effort to increase their present production.

Market Trend

Should kerosene prices continue to advance and the distillate demand continue as at present there is every possibility of additional advances being posted for dis-

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REFINED MARKET BAROMETER

Gasoline prices continued to weaken in all refinery sections, but the gradual decline is believed to have about run its course. Jobbers will probably replenish their stocks with the first indication of a market stability and a favorable volume of business is anticipated over the balance of February. An improvement in the California retail situation promises to aid the refinery market there. Kerosene is favored in predicting the future of the market, due to the persistent inquiries for that product on the part of exporters. Natural gasoline shows a marked stability in the Mid-Continent, but has weakened slightly in California. With fuel oil stocks continuing to mount, refiners see little promise in the future of that market and many are attempting to solve this problem by adding to their cracking facilities. Distillates and low cold test gas oils are very actively traded in all sections as a result of the prolonged, severe winter. Lubricants continue to move slowly along the Gulf Coast and the market is sluggish in the other refinery centers with the exception of bright stocks and cylinder stocks, which moved to a new high for the year.

Mid-Continent—Except for the offering of very low prices on gasoline by some West Texas refiners, that market remained unchanged. Kerosene strengthened and its future is viewed with optimism. Wax offerings were withdrawn when a sharp break occurred in that market, and refiners say they will store their production at present.

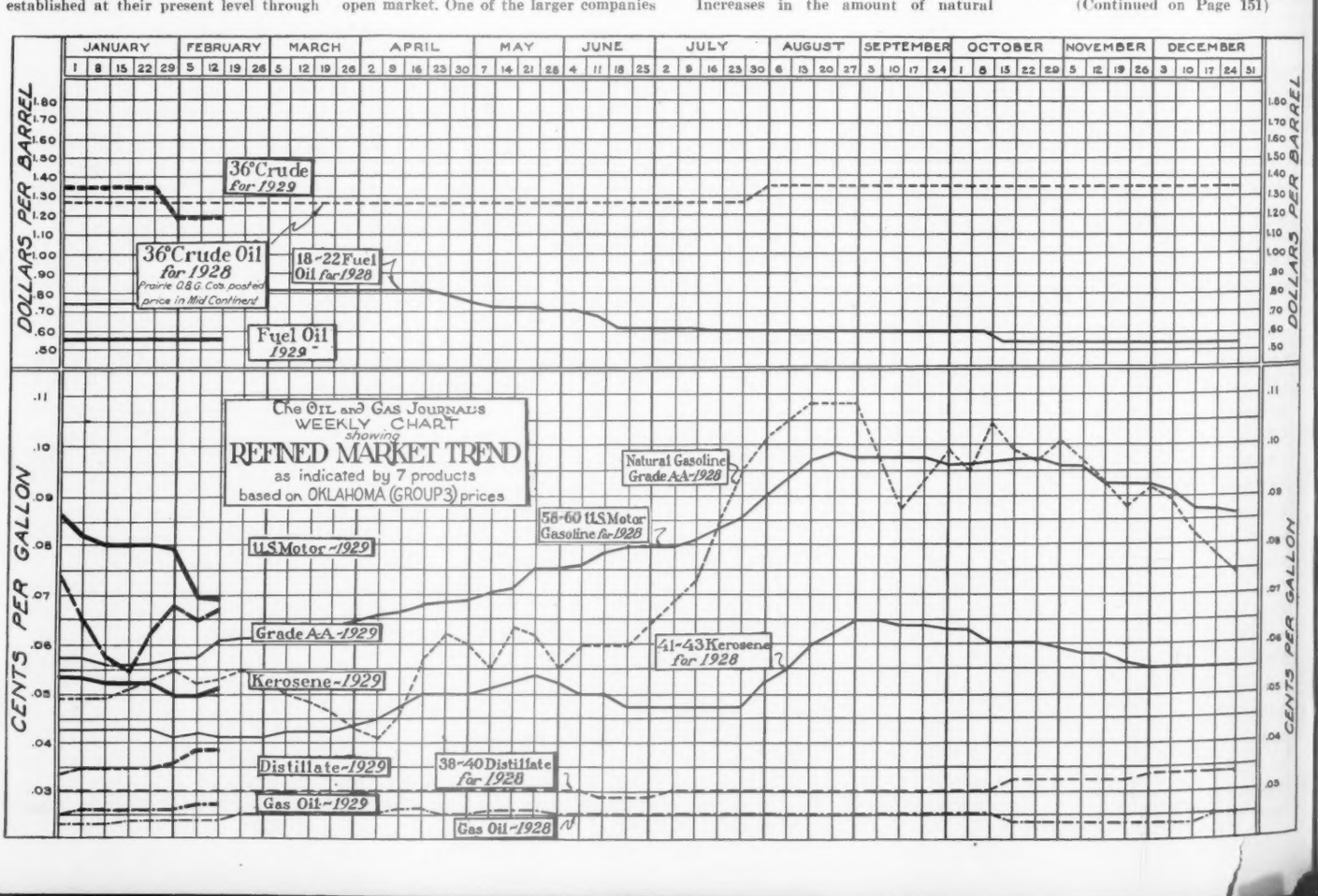
Atlantic Seaboard—Gasoline prices showed an additional decline on the East Coast as the unfavorable weather continued. Export kerosene inquiries helped to support that market. Wax was freely offered at lower prices, but the bottom of the market is still to be reached according to the buyers.

Chicago—The active distillate market featured the Chicago trading for the week with little change in the balance of the refined products.

Gulf Coast—Lubricating oils moved very slowly and there was no thought of an improvement in the near future. New low prices were quoted on large cargo lots of fuel oil although the local market remained unchanged.

California—Except for a slight reduction in the natural gasoline price, there was little change in the California market.

Pennsylvania—Gasoline was being freely offered and prices were generally below the level of last week. Wax weakened but was being held by the refiners, who considered the present slump a temporary condition.



Institute Acts on World Curtailment

Regional Committees to Report on Supply and Demand. Directors Favor State Legislation. Urge Greater Use of Asphalt

By C. O. Willson

ST. LOUIS, Mo., Feb. 12.—The machinery looking toward a world-wide curtailment of oil production to remedy existing overproduction was set in motion this afternoon when the Executive Committee of the American Petroleum Institute adopted a resolution providing for immediate action. The resolution calls for the appointment of four regional committees. These will represent four areas as follows: California, interior, and Gulf Coast in the United States, and Mexico and northern South America as a fourth region representing the foreign interest concerned. It is expected that these committees will be appointed by President Reeser next Monday.

The plan of organization is similar to that followed in the formation of the code of ethics which proved so successful. These regional committees will start to work immediately. Surveys will be made covering supply and demand by areas and then the regional committees will meet in New York to work out a world program of operation. It is anticipated that the general committee will be able to meet within 30 days.

The action of the Executive Committee followed an informal meeting of executives today representing most of the largest producing companies in the United States. At this meeting conditions in the industry were discussed and operators from all parts of the country explained the overproduction developments in their sections.

Speakers at the meeting included Walter Teagle, president of the Standard Oil Co. (New Jersey); L. P. St. Clair, vice president of the Union Oil Co.; W. S. Farish, president of the Humble Oil & Refining Co.; W. G. Skelly, president of the Skelly Oil Co.; S. H. Keoughan, president of the Continental Oil Co.; R. C. Holmes, president of The Texas Company, and President Reeser of the American Petroleum Institute.

Statement by Farish

Mr. Farish explained a report which he had compiled showing the probable future production in the main producing states of Texas, Oklahoma and California, together with an estimate as to the consumption requirements. His report showed that unless some drastic action were taken, the industry was faced with a large overproduction which assured a demoralized market condition both for crude oil and refined products during 1929.

The discussion showed that those present were in agreement that any curtailment in one area would fall short of bringing about the large reduction in supply which is needed. Mr. Holmes outlined a plan which he had presented the night before at the meeting of the board of directors. This plan, which apparently had the support of all present, proposes to handle the overproduction problem on a world basis as has been advocated by representative leaders of the industry during the past year. The first problem will be to make a rapid survey of conditions in regard to both supply and demand and then obtain an equilibrium between the two by curtailing on an equitable basis in all the areas now overproducing.

It is not intended that this world program shall in any way interfere with the legislative program approved by the board of directors.

The action today in effect will carry out the second resolution adopted last night in which operators were urged to voluntarily curtail as an immediate remedy for existing conditions.

ST. LOUIS, Mo., Feb. 12.—The petroleum industry, through action in two of its branches today and yesterday, has taken steps seeking the aid of federal and state governments in the operation of its business. The Board of directors of the American Petroleum Institute, after a lengthy session last night, adopted a resolution which places the industry on record as favoring legislation in the several oil-producing states which will prevent overproduction of crude oil.

The resolution calls for the enactment of laws which will not only prevent the wasteful production of crude oil and natural gas but which also will permit agreements among operators to assure the orderly production of crude oil including the power of proration. This is a far-reaching action which, if acted upon favorably by the several states, will enable the operators to keep the crude oil supply in line with the current demand, the states aiding through restrictive regulation and policing powers.

In the marketing end, at a hearing before a commissioner yesterday, the industry completed an almost final step in a program which will secure the aid of the Federal Trade Commission in enforcing a code of ethics to govern the marketing of refined petroleum products. The code passed through the hearing with minor changes and now awaits the final approval of the commission. The proceedings of yesterday in regard to the hearing are explained elsewhere in this issue.

Co-operation Urged

In addition to the adoption of the resolution favoring state legislation the board of directors of the institute adopted a second resolution by unanimous action calling upon the executives of oil-producing companies to co-operate immediately to prevent the spread of overproduction pending the action of state legislatures.

A third resolution calls attention to the large potential market for asphalt in road building and pledges the support of the industry in all programs to improve highways. No final action was taken in regard to the industry's attitude toward a tariff on the importation of crude oil. The board of directors authorized President E. B. Reeser to appoint a committee to consider this matter and report back to the board with recommendations.

Red Letter Day, Says Reeser

"This is a red letter day in the oil industry," Mr. Reeser said this morning in commenting on the action of the board of directors and the success which attended the hearing for the code of ethics. "With this recommendation for legislative action to check what threatens to become an acutely serious situation, the institute has definitely gone on record as favoring the use of a policeman to help conserve the Nation's greatest natural resource. These measures will do much to hasten the proper balancing of production with consumption. The approval of the code of ethics by the Federal Trade Commission will mean that the industry will have the aid of the federal Government in merchandising its products along sane lines."

The action of the board of directors in regard to legislation follows the recommendation of the committee appointed by President Reeser early in January to consider the advisability of asking for state laws to aid the industry.

The committee met here Sunday and Monday and formulated the resolutions, all members agreeing except W. H. Francis of the Gulf Production Co. The resolution was discussed at length at the meeting of the board of directors, and when finally voted upon received the support of all except George S. Davison, president of the Gulf Oil Corp., and E. R. Brown, president of the Magnolia Petroleum Co. Those voting for the resolution were W. S. Farish, Press St. Clair, W. S. Fitzpatrick, H. F. Sinclair, Walter C. Teagle, Frank Phillips, George P. Whaley, W. M. Irish, W. N. Davis, H. V. Foster, Roy B. Jones, W. G. Skelly, E. T. Wilson, P. M. Miskell, J. F. O'Donohoe, Wallace Pratt, John L. Gray, L. V. Nicholas, Axtell J. Byles, W. C. Franklin, J. C. Van Eck, H. M. Dawes, J. S. Carroll, S. A. Guiberson, H. B. Earhart, Clark H. Kountz of the Prairie Pipe Line, L. J. Drake and E. B. Reeser.

Committees to carry out the resolution will be appointed immediately. At present important legislation is pending in both Texas and California. Operators from both States explained at an informal meeting today that they were powerless to do anything more than they have al-

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Conservation Plan Effective Feb. 14

Effort Will Be Inaugurated Then to Hold Production of Oklahoma Down to About 650,000 Barrels Daily

By J. L. Dwyer

The conservation plan to hold production in Oklahoma more nearly to market requirements, formulated at a meeting of the operators of the Greater Seminole area in Tulsa on February 5 and described in detail in the February 7 issue of The Oil and Gas Journal, will be made effective at 7 a. m., February 14. The plan calls for a reduction in the output of flush fields of Oklahoma to the extent that production of the entire State will not exceed approximately 650,000 bbls. daily, or a decrease of about 78,000 bbls. from the average output during the past two weeks.

The older fields of Oklahoma, or the settled production areas, will not be affected by this conservation measure. The curtailment program will be enforced only in the pools of the Greater Seminole area, the older pools of the area having their production reduced 18 per cent with the St. Louis Pool being subjected to a 20 per cent cut and the Maud Pool, which contains a greater percentage of flush oil than any of the other pools of the area being reduced 24 per cent.

Production Affected

The various operating companies have furnished affidavits regarding their daily average production for the first five days of February, and the combined production of the pools for this period was approximately:

Pool—	Bbls.
Little River	103,638
Bowlegs	41,808
Earlsboro	67,367
Seminole	40,034
Searight	9,301
Total	262,148
St. Louis	126,094
Maud	35,495
Grand total	423,737

The rate of production which is to be permitted for the last two weeks of February will allow the pools to produce as follows:

Pool—	Bbls.
Little River, Bowlegs, Earlsboro, Seminole and Searight	214,962
St. Louis	100,876
Maud	26,977
Total	342,815
Potential production	423,737
Permitted production	342,815
Reduction	80,922

Mission Pool Problem

The only problem remaining for adjustment is the Mission Pool. The wells in this pool have been shut down on top of the Wilcox sand in accordance with an agreement formed last fall. The official completion date upon which the wells were to be drilled in is February 15, and the pool has been the subject of much debate. Some of the operators in the Mission area are opposed to having the pool remain shut in while the other pools of the region are allowed to produce. At the February 5 meeting, a proposal to allow all Wilcox sand wells at Mission to produce 200 bbls. per day for 30 days after February 15 was submitted, but failed to meet the approval of one operator who appealed to the Oklahoma Corporation Commission for a restraining order against the proposal.

There are now about 65 or 70 wells ready to be drilled in in the Mission Pool, and while the outlook for many of them is not optimistic as far as prospects for production are concerned, the consensus of opinion places the probable production of the pool at 50,000 bbls.

A hearing will be held before the Oklahoma Corporation Commission on Friday, February 15, to settle the Mission problem. It is very likely that the hearing will result in the Mission Pool wells being drilled in and thrown wide open until their potentialities have been established, and then the entire Seminole region being prorated with the Mission production included. If this should be the result, the figures of proration given above must be subjected to an upward revision. With Mission thrown open, the daily production of Oklahoma will be about 775,000 bbls. daily, and a heavier rate of production will be necessary in order to reduce the State's output to 650,000 bbls. per day. It is probable that with Mission in the picture as a producing pool, a proration of 21 or 22 per cent will be placed on the pools which have now been ordered to reduce their output by 18 per cent, and that St. Louis will be given a 25 or 28 per cent cut, while the Maud and Mission Pools will be reduced from 33 to 36 per cent.

A greater rate of proration is imperative for the newer fields to compensate for their sharp rate of decline. In the case of the older pools of the region,

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Main Provisions of Code Unchanged

Prominent Oil Men From Throughout Country Attend Hearing Before Federal Trade Commission. Harmony Characterizes Session

By C. O. Willson

ST. LOUIS, Mo., Feb. 11.—The code of practices for marketing refined petroleum products sponsored by the American Petroleum Institute today successfully withstood the efforts of those who sought to make important changes in its provisions. As the result of the one-day hearing before the Federal Trade Commission, whose formal approval of the code is sought, the main provisions are unchanged.

One rule and the part of another were dropped because their legality was in question. The first provision to be eliminated from the code was the second paragraph of Rule 14, which reads as follows: "No marketing company shall knowingly sell or deliver gasoline or other petroleum products to any dealer, distributor, or commercial account where such sale or delivery violates an existing written contract between another company and such dealer, distributor or commercial account."

Rule 19 was dropped in its entirety. It provided "Refiners will attempt to see that their distributors, jobbers or wholesalers are familiar with and carry out the principles of this code. No refiner, distributor, jobber or wholesaler shall knowingly sell to any distributor, jobber, wholesaler or dealer who knowingly violates any of the provisions of this code."

On motion of Paul E. Hadlick one new rule was added to the code. It provides: "The selling of refined petroleum products below cost for the purpose of injuring a competitor and with the effect of lessening competition is an unfair trade practice."

An attorney representing certain co-operative jobbing concerns brought up the question of whether or not Rule 9 would affect their operations. These co-operative concerns are organized under the laws of the state in which they operate. The shareholders at regular intervals secure dividends based on the amount of gasoline and other products that they purchase. It was the consensus of opinion that operations of this kind were legitimate and fair so far as the code was concerned and did not come under the prohibitions of Rule 9, which are aimed at rebates, bonuses and other similar concessions.

W. R. Boyd, Jr., executive vice president of the American Petroleum Institute, stated that the Department of Justice had expressed the opinion that Rule 19 was clearly a violation of the Sherman Anti-Trust Act. After Commisioner Edgar A. McCullough, who presided at the hearing, had questioned the legality of the second paragraph of Rule 14 this provision also was voluntarily withdrawn.

Prominent Men at Meeting

The hearing today was attended by a surprisingly large number of prominent oil men from all parts of the country, indicative of the interest being taken by refiners and marketers of gasoline, kerosene, automotive oils and greases in the code which proposes to stop the present unethical and wasteful methods of distribution.

The hearing opened with Commissioner McCullough presiding, assisted by M. Markham Flannery of the Division of Trade Practice conferences. Paul E. Hadlick, secretary of the Minnesota Petroleum Marketers Association, was elected secretary. Commissioner McCullough in opening the hearing cleared up several matters which have been widely discussed in the oil industry recently relative to the enforcement authority of the Federal Trade Commission. He explained that the commission's authority was divided into two groups. In the first place it has the authority, regardless of any action by an industry, to investigate practices which are a clear violation of the law and cite the offenders for legal action. The second group relates to business conduct involving matters which are not illegal but which have been adopted by the industry concerned. This covers the practices which the oil industry proposes to adopt as a code when finally approved by the Federal Trade Commission. The commissioner explained that the commission had no authority to enforce the provision of the code against anyone who had not agreed to their adoption. However, companies or individuals who agree to the provisions of the code and then secretly violate them are subject to action by the Federal Trade Commission.

All Required to Register

In line with this explanation the 298 men who attended the hearing today were required to register, giving their names and the companies or associations which they represented. A committee consisting of H. H. Ragle, R. R. Irwin, president of the White Eagle Oil & Refining Co., and R. D. Leonard, vice president of the Atlantic Refining Co., was appointed to classify these registrations. Based on the committee's report, Mr. Boyd estimated that over 90 per cent of the refining and marketing branches of the oil industry were represented at the hearing.

Mr. Boyd offered the resolution which formally brought the code as approved by the American Petroleum Institute at its annual meeting in December to the attention of the meeting. Mr. Boyd explained how the code had been formulated by a general committee consisting of [illegible] chairmen of six regional committees. These regional committees, covering [illegible] entire United States during the [illegible] part of 1928, had formulated regional codes with the approval of representative distributors in their territories. The chairmen of these regional committees then drew up the general code which was approved by the board of directors of the American Petroleum Institute and by the membership in an open meeting in December.

The general committee which was present today and took an active part in the discussion consists of Roy B. Jones, president of the Panhandle Producing & Refining Co., chairman; R. C. Holmes, president of The Texas Company; P. M.

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Big Yield Per Acre in St. Louis Pool

One Lease Has Produced 78,169 Bbls. an Acre During Five Months. Field Offers Good Opportunity for Studying Output

By J. L. Dwyer

The problem of estimating future oil recovery from properties having a flush production, or else situated in regions close to discovery wells, when the matter of purchasing the properties has been under consideration has always been more or less of a headache to the executives of the industry and to investors who specialize in this sort of enterprise.

Whenever a new find of exceptional merit is uncovered, there is naturally a desire upon the part of companies having no protective acreage around the well to fortify their holdings. This entails considerable figuring, and naturally the most interesting question is, "If we buy this lease, what oil recovery can we reasonably expect?" While of course each separate venture of this character differs, and requires individual attention and study, there has long been an arbitrary figure used in calculations. The first thought usually (in the Oklahoma-Kansas territory) is, will this lease produce 20,000 bbls. to the acre ultimately. The ultimate recovery is the item of prime interest when property purchases are considered.

Since the air-gas lift method of producing oil has had its expansion, it seems that this arbitrary figure might well be subjected to a revision upwards, for there are numerous instances where it is far below the rate of production which may be anticipated. The St. Louis Pool of Pottawatomie County, Oklahoma, gives ample evidence of this.

The Wilcox sand production of the St. Louis Pool offers unusual materia[l] for study. The pool is located in Townships 7-4 and 7-5, and the first production obtained in the area was from the

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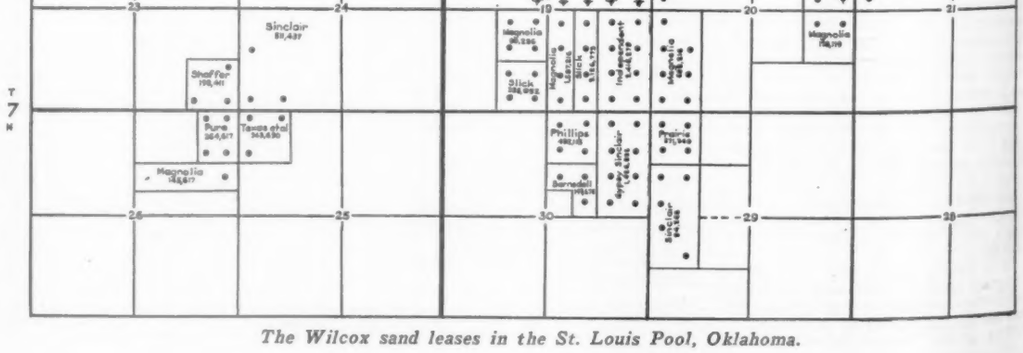
ST. LOUIS RECOVERY BY LEASES

Table showing oil recovery from the Wilcox sand in the St. Louis Pool of Pottawatomie County, from discovery until January 1, 1929.

Company and lease—	Total production	Per acre production
Barnsdall Oil Co., Stahl	143,672	4,789
Gypsy-Sinclair, Markham et al, Stahl	1,426,835	17,835
Independent Oil & Gas Co., Youts	3,416,279	42,703
Magnolia Petroleum Co., Cherry-A	145,617	3,640
Magnolia Petroleum Co., Hembree	1,587,216	39,680
Magnolia Petroleum Co., T. Fyke-A	24,679	300
Magnolia Petroleum Co., T- Fyke-B	178,119	4,453
Magnolia Petroleum Co., C. A. Youts	90,226	2,255
Magnolia Petroleum Co., H. E. Youts	688,216	8,603
Mid-Continent Petroleum Corp., Guinn	194,470	4,862
Phillips Petroleum Co., Stahl	492,115	12,303
Prairie Oil & Gas Co., Wolf	271,340	6,783
Pure Oil Co., Thomas	264,617	6,615
Shaffer Oil & Refining Co., Cherry	198,411	4,960
Shell Petroleum Corp., Smith	16,417	205
Sinclair Oil & Gas Co., Blandin	511,437	3,196
Sinclair Oil & Gas Co., Nadash	94,268	1,178
T. B. Slick, Inc., Hembree	3,126,773	78,169
T. B. Slick, Inc., Youts	326,053	8,151
Texas-Fuhrman, Cherry	343,690	8,592
Total Wilcox	13,540,450	



The Wilcox sand leases in the St. Louis Pool, Oklahoma.

Crude Imports vs. Refinery Exports

Foreign Crude Supply Contributes to Overproduction, While Foreign Demand for Finished Products Saves Refinery Market

By C. O. Willson

The importation of crude oil and the exportation of refinery products were the outstanding market factors in the oil industry during 1928 according to data based on the reports of the Bureau of Mines.

The government's report for December was released during the past week and the data on which this discussion is based were compiled from the 12 monthly reports for 1928. In the near future the Bureau of Mines will issue a preliminary report covering 1928 and later in the year a final report. These later reports usually include minor changes in the figures now available.

Any summarization of the crude oil situation in 1928 shows that the increased supply of foreign crude oil in this country was an important factor in the market situation throughout the year. At the same time the enlarged consumption of refinery products in foreign countries resulted in a large increase in the export demand at refineries in United States, the rate of increase for most products being larger than in the domestic market. Taking all factors into consideration it is apparent that the increased exports of refinery products were more important from the marketing angle than was the enlarged importation of crude oil.

ESTIMATING DEMAND

The demand for gasoline in this country for the year ending December 31, 1928, was 381,729,000 bbls.

In the Annual Number of The Oil and Gas Journal published February 10, 1928, it was estimated that the total gasoline demand during 1928 would be 382,000,000 bbls.

REFINERY OPERATIONS IN 1928

CRUDE OIL RUNS TO STILLS

(Data given in thousands of barrels)

Total	Increase†	Pct.	Domestic	Increase†	Pct.	Imports	Increase†	Pct.
912,831	83,996	10.1	837,947	58,134	7.4	74,884	26,183	53.8

SUPPLY AND DEMAND FOR REFINERY PRODUCTS

(Data given in thousands of barrels)

SUPPLY

Gasoline

Total	Increase†	Pct.	Domestic	Increase†	Pct.	Imports	Increase†	Pct.
381,479	46,042	13.5	377,183	46,748	14.1	4,296	*706	*16.4

Kerosene

60,360	4,192	7.4	60,156	4,043	7.2	204	149	270

Fuel Oil and Gas Oil

433,023	31,833	7.9	425,755	32,689	8.3	7,268	*856	*10.5

Lubricants

34,672	2,943	8.1	34,659	2,938	9.3	13	5	

Petroleum Wax

(Thousands of pounds)

654,892	50,083	8.3	630,144	45,797	7.8	24,748	4,286	20.9

DEMAND

Gasoline

Total	Increase†	Pct.	Domestic	Increase†	Pct.	Exports	Increase†	Pct.
381,729	40,585	11.9	327,932	31,125	10.5	53,797	9,460	21.3

Kerosene

59,074	2,046	3.6	37,008	*483	*1.1	22,066	2,529	12.9

Fuel Oil and Gas Oil

425,863	36,759	9.4	381,401	39,188	11.6	44,462	*2,929	*6.6

Lubricants

34,192	2,747	8.7	23,137	1,468	6.7	11,055	1,279	13

Petroleum Wax

(Thousands of pounds)

695,186	72,260	1.6	303,563	21,060	7.4	391,623	51,200	15

STOCKS

Gasoline			Kerosene		
End of year	Increase†	Pct.	End of year	Increase†	Pct.
33,066	*250	*.7	9,001	1,286	14.2
Fuel oil and gas oil			**Lubricating oil**		
134,901	7,160	5.6	8,340	480	6.1
Petroleum wax					
110,344	*40,294	*36.5			

*Decrease. †Increase over 1927. Data based on reports of the Bureau of Mines.

The importation of crude oil increased from 58,746,000 bbls. in 1927 to 79,583,000 bbls. in 1928, an increase of 36.3 per cent. The domestic production of crude oil in contrast was practically the same for the two years the production in 1928 totaling 900,364,000 bbls. and 901,129,000 bbls. in 1927.

The increase of 21,200,000 bbls. in imports was approximately equal to the excess crude oil supply over demand for the year. Crude oil stocks totaled 465,883,000 bbls. at the start of 1928 and 485,401,000 bbls. at the end of the year, an increase of 19,558,000 bbls. This would indicate that all the additional foreign crude oil represented a surplus, necessitating additions to inventories in this country.

This increase in crude oil imports materialized although the imports from Mexico, the oldest foreign source of supply, dropped from 26,019,000 bbls. in 1927 to 17,279,000 bbls. in 1928.

This decrease was offset by the increases in Venezuela and Colombia. Crude importation from the former country more than doubled, jumping from 21,560,000 bbls. in 1927 to 46,976,000 bbls. in 1928. Columbia imports increased from 7,962,000 bbls. in 1927 to 11,838,000 bbls. in 1928. From the remaining countries imports totaled 3,490,000 bbls. in 1928 and 2,842,000 bbls. in 1927.

It should be stated that the bulk of this imported crude oil is of low gravity and from the refining standpoint is not comparable to the high gravity crudes which constitute the greater part of the crude oil available in this country. This is particularly true of the Venezuela production which at the present time represents about 60 per cent of our total imports. Most of this crude oil is difficult to refine and the yields of gasoline and other light end products are small.

Although the yields of finished products are not as great the government reports for 1928 shows that this imported crude oil is being run to the stills of the refineries in this country. The crude oil runs to stills totaled 912,831,000 bbls. in 1928, an increase of 83,996,000 bbls. over 1927. This is an exceptionally large yearly increase in crude oil runs to stills. It may be explained in part as due to the unfavorable market situation of 1927 in which refiners reduced their plant operations as much as possible in order to correct conditions. As a result less crude oil was refined in 1927 than under normal conditions reflected in the fact that refiners withdrew 15,000,000 bbls. of gasoline from stocks.

Of this 83,996,000-bbl. increase in crude oil runs to stills 26,183,000 bbls. were foreign crude oils and the remainder, domestic crude oil. At present approximately 8.5 per cent of the crude oil refined in this country is from foreign countries.

Refinery Situation

In addition to the crude oil imports as shown in the accompanying table, small quantities of refinery products are imported in this country. These imports come from refineries located in countries near the United States.

The gasoline imports in this country constitute a little over 1 per cent of the total supply and 1.6 per cent of the fuel oil and gas oil is imported. The imports of kerosene, lubricating oils and petroleum wax are so small that they are of no consequence in markets.

Exports Large

Exports of refinery products on the other hand are relatively large and as previously stated these foreign outlets were particularly important in 1928.

The case of gasoline is typical. The

(Continued on Page 147)

Plan to Deplete Sands Quickly

Latest Flooding Policy in Bradford-Allegany Area Calls for Large Initial Expenditure but Promises Rapid Returns

By James McIntyre

Producers in the Bradford-Allegany district in northern Pennsylvania and southern New York are quick to scrap existing methods and to adopt new ways of extracting oil from the enormous sand body that underlies that district.

Twenty years ago those fields had reached a stage where it was barely profitable to produce the oil the sands yielded, and then came the process of flooding the sands with ground water, the details of which have been so often described in The Oil and Gas Journal that it is needless to do so again. By means of the water drive or flood the production of the two fields has increased tremendously and they have not yet approached their new peak of production.

The system of flooding most in vogue in the Bradford-Allegany district would have taken from 40 to 50 years to exhaust the sands. In the course of the past year some operators decided that it was useless to spread the operation of the field over so great a length of time when there was a present-day demand for the crude that was not being supplied, and when, at the same time, their financial obligations, growing out of very high cost of acreage (which has risen to $4,000 per acre in some parts of the field) and the expense of carrying on a drilling campaign, was cutting deeply into their profits.

"Why go on paying interest on big loans over a long period when we can get the oil out and clean up our indebtedness in a few years?" was an argument often used. So a newer plan of flooding was worked out and put into execution first by one, followed by others. It has by no means become general and before it has been, other and better means may be found; for such has been the history of the development of flooding from the first, as the operators added to their knowledge of the peculiarities and possibilities of the Bradford and the Richburg sands.

Evolution of Flooding

Paul D. Torrey of Bradford has described the older types of flooding in a paper entitled "Some Factors Influencing Production of Oil by Flooding," at the winter meeting of the American Institute of Mining and Metallurgical Engineers in New York in December, 1927. On that occasion, Mr. Torrey wrote:

"It was soon discovered that in order to obtain full advantage of the initial water well, it must be fairly well surrounded by producing wells. Old wells were utilized as far as was possible, but ordinarily they were spaced too widely for efficient flooding. and it was necessary to drill at least a few new wells. The circle flood was thus developed, but although this method requires a minimum capital investment, its disadvantages soon become evident. The fact that one well could not supply a volume of water adequate to deplete the surrounding area within a reasonable period of time was apparent. Furthermore, since the flood circle is expanded by each successive ring of wells, the cost of development constantly increases, although the cost of drilling additional circles of wells is frequently reduced to a certain extent by increasing the distance between the wells. A quicker and more effective method was made necessary by the heavy investment required in drilling new, closely spaced wells, the high price of land and the necessity of protecting property lines. The line flood, developed by the Forest Oil Corp., consisting of producing wells staggered on both sides of an equally spaced line of water wells, met this need. This method, with various modifications has been generally adopted and remains

(Continued on Page 146)

Field Methods of Controlling Water

Various Practices and the Results of Flow and Pressure Control and Bottom Hole Plugging Are Discussed

By R. Van A. Mills
Petroleum Engineering Editor

The water control problem was discussed from an analytical point of view in The Oil and Gas Journal of September 20, 1928, in a paper entitled "Water Control Problems Analyzed." The purpose of the present paper is to consider the various methods of water control that have been, or can be used in actual field practice.

High pressure edge water and also both top and bottom water under pressure tend to migrate through the productive area of an oil sand replacing the oil and gas produced, entrapping a large part of the remaining oil and gas, and drowning out the wells. Unnecessarily rapid flooding and drowning out of oil and gas sands is generally caused by the failure to shut off top and bottom waters and the failure to maintain adequate pressure control and flow control in operating the wells. Flowing wells wide open and swabbing are responsible for serious water troubles in many fields. Efforts to get the best of high pressure water by its rapid removal with the pump, the swab, or the air lift, generally result in bringing more water into the productive area. Moderate volumes of low pressure edge water can be handled in this way but efforts to lower the level of high pressure edge water have generally failed. Flow control, back pressuring, bottom hole plugging, and excluding top and bottom water from the productive formations have all proven beneficial.

Operators should be alert to detect any indications of water encroachment such as sudden increases in the production of oil and gas, sudden changes in pressure, noteworthy rises in the fluid temperatures, the actual appearance of or increase in water in the wells, or increases in the formation of emulsion without the actual appearance of free water. Such indications of water encroachment should be met by applying the methods outlined in this and succeeding papers.

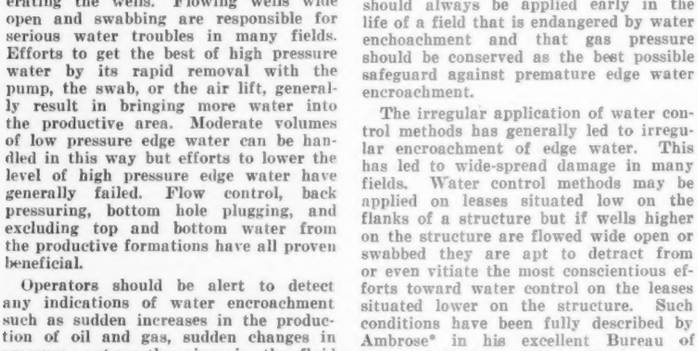


Figure 1—Oil and water production curves showing the effect of encroaching water upon the oil production of a well. After A. W. Ambrose in United States Bureau of Mines Bulletin 195.

Flow and Pressure Control

Because of the conditions imposed by competitive production methods in this country, examples of wells and entire fields going to water prematurely because of failure to hold adequate pressure on the productive formations are much more numerous than those illustrating the benefits of proper flow and pressure control.

Numerous failures from belated efforts to hold back water by pinching in the wells after the gas pressure has been let off of a sand and water has appeared are also on record. These have tended to discredit systematic efforts toward water control but they really emphasize the importance of applying proper flow and pressure control methods before the damage has been done by letting off the gas pressure, or by the too rapid flowing of oil under water pressure.

As a rule the gas pressure in a sand can be depleted much faster than the pressure can be restored by encroaching edge water. Consequently even though wells are partially or entirely closed at the first indication of encroaching water, the water may continue to advance and drown the wells out before it builds up enough pressure to check its own advance. The success or failure of belated efforts toward water control depend too largely upon local conditions to warrant more than the two broad generalizations, that flow and pressure control methods should always be applied early in the life of a field that is endangered by water enchoachment and that gas pressure should be conserved as the best possible safeguard against premature edge water encroachment.

The irregular application of water control methods has generally led to irregular encroachment of edge water. This has led to wide-spread damage in many fields. Water control methods may be applied on leases situated low on the flanks of a structure but if wells higher on the structure are flowed wide open or swabbed they are apt to detract from or even vitiate the most conscientious efforts toward water control on the leases situated lower on the structure. Such conditions have been fully described by Ambrose[1] in his excellent Bureau of Mines bulletin entitled "Underground Conditions in Oil Fields." Let it be emphasized that water control methods should be applied on a co-operative basis throughout an entire field to obtain the utmost protection for the field.

Examples of Flow Control

Some of the most serious conditions requiring the pinching in of flowing wells to hold back water are illustrated by early operations in eastern Mexico. The writer has had no personal experience in the Mexican fields so that the following notes upon water problems are based upon information gathered from the literature and from engineers who took part in the work. The reader is also referred to the article by Carroll V. Sidwell upon pressure control methods in Mexico which was published in The Oil and Gas Journal of December 27, 1928.

In these fields it soon became evident that wells flowing uncontrolled or wide open promptly went to salt water. The phenomenally high yields, the open character of the porous and fissured limestone reservoir beds, the viscous character of the oil and the occurrence of high pressure bottom and edge water all favored serious water coning.

As a consequence, several large wells that were not properly controlled, quickly went to water as did the entire fields where some of these were located. The Dos Bocos well came in wild and went to water within a few months. The East Coast Oil Co.'s well at Topila flowed open for a year and a half and then went to water but was brought back by pinching it in. The Alex Smith well at Topila also went to water and was brought back by pinching. A somewhat different example of a well going to water is furnished by Potrero del Llano No. 4. After producing approximately a million barrels of oil this well was shut in because of revolutionary disturbances. Oil and gas then broke through to the surface outside the well. Resultant seepages were ignited by lightning and control of the well was lost. When the fire was extinguished seven months later and the well was finally brought under control, water had appeared. The well produced at the rate of 50,000 bbls. per day but half of this was emulsion.

It was apparent that pinching and pressure control methods in these fields were necessary to hold back water and such methods were generally adopted. Wells producing from the Tamasopo lime in the Los Maranjos-Tepetate Field responded readily to pinching methods. One well that was reported to have a daily production of 30,000 bbls. of salt water, together with a few barrels of oil, was pinched down to a daily production of only 500 bbls. of water. Its production of oil then gradually increased. The well was subsequently opened up, a little at a time, until at the end of two months it was producing 25,000 bbls of oil per day with very little water.

The conditions met in the porous lime production of eastern Mexico are described briefly by De Golyer[2] as follows:

"As you know, in Mexico much oil was produced by bleeding or stripping the wells, but this, to my mind, was a matter of water coning. I am of the opinion that under certain very favorable circumstances, water cones probably achieved a height of 80 feet from base to apex during the exploitation of some of the fields in the 'Golden Lane.'

"The diagrams in your article in The Oil and Gas Journal of September 20 would not seem to me to cover a case of this sort. They probably represent quantitatively narrower limits of production and of production through sand. In Mexico the production was much higher and the restricting influence of the reservoir rock was probably reduced to a minimum. I suspect that in the Mexican wells, the water cones gradually became so sharp from high rate of production that they were beheaded by the onrushing oil and that emulsion was formed before the top of the cone ever reached the bottom of the casing."

West Texas Fields

In the West Texas fields much of the production from porous limestone formations is pinched in to only 2 per cent of its flow capacity. Drastic proration in these fields is undoubtedly working a benefit to the operators from a water control point of view. This is proven by the rapidity with which many wells went to water in the Hendricks Field, in Winkler County before proration was established. One company operating in the Hendricks Field applied flow control from the time its first wells were drilled in. By this practice water was held back from its wells long after the wells on neighboring leases had gone very largely to water. The same thing applies to the McCamey Field in Crane and Upton counties where unrestricted production went rapidly to water. Experience has indicated that this would happen in the Yates Field if the wells were opened up to anything like full capacity.

In this connection E. O. Bennett[3] is quoted as follows:

"I cannot stress too strongly the vital necessity of using pressure control for the elimination of water encroachment in most oil-bearing structures. You can not write too much on this subject as it is one of utmost importance to the oil industry today. It is not unreasonable to expect that where oil in pools is accompanied by gas and there is water in close proximity to the wells, proper pressure control will in a great many cases permit as much as double the normal ultimate yield which would be recovered under nonconservative practice.

"The production of wells in the Yates Pool has demonstrated beyond any doubt that where water is present, the drowning of wells can be hastened by improper pressure control and the fact that pressure is the most important means of control of water cannot be too greatly stressed in any type of producing field. There is a growing tendency on the part of operators who are over anxious to get production, to open up large wells at rates which are dangerous to the wells on account of the pressure reduction and water encroachment. It has been conclusively proven by actual test operations on many wells that where a well is pinched in so that the well pressure on the formation is approximately 90 per cent of the rock pressure, that although the well's production rate is much less, the decline is flattened to almost a horizontal line and after a period of but a few weeks will generally cross the decline curve of the same type of well which would exist if the well were produced wide open. The pinched in well will generally produce more oil than the one which is produced wide open."

Production From Sands

The benefits of beaning were fully demonstrated in the second sand (Blossom sand) production in the Smackover Field, Arkansas. The wells were large, ranging around 12,000 to 15,000 bbls. per day. Flowing them wide open not only brought in water, but increased emulsion troubles and sanding up of the wells. On this account the use of one-quarter-inch to 1¼-inch beans in 3-inch and 4-inch flow lines became general practice. One company choked its wells to 50 per cent of their open flow capacity while a company operating an adjoining lease flowed its wells wide open. The choked wells flowed two weeks longer than the others and produced more oil with less trouble from water, emulsion, and sand.

Restricted flow by "beaning" has been practiced in California for some years to hold pressure on the sands, retard the rate of flow and prevent the wells from sanding up. During the past two years several of the more progressive oil companies operating in these fields have applied a combination of pressure maintenance and pressure control methods that promise beneficial results in retarding water encroachment as well as increasing the recovery of oil. A striking example of this is afforded by the operations of the Marland Oil Co. in the Seal Beach

(Continued on Page 99)

[1] Ambrose, A. W., "Underground Conditions in Oil Fields," United States Bureau of Mines Bulletin 195, 1921.

[2] Personal communication.

[3] Personal communication.

Fifteen Minutes Was All He Needed

In That Time John Dwigans Acquired a String of Tools and Became a Drilling Contractor in 1872. Drilling Ever Since

By Thomas F. Smiley

Among the many ways of becoming a drilling contractor that of John W. Dwigans was a model of simplicity and directness. He walked out on the dock at Fisher's Landing in Oil City, Pa., with an idea in his head, a keen look in his eye and $100 in his pockets. When he left the dock his idea had become a concrete fact, his cash resources had shrunk to $30, the look in his eye was one of triumph and he had added to his inventory one drill stem, one sinker bar, two sets of jars, two center-bits, one reamer, one temper-screw and one sand pump. The transaction required 15 minutes.

That was back in 1872 and John Dwigans, son of a man who helped to drill the first oil well, has been drilling wells ever since. He had been working in the oil fields for two years prior to this incident, so he has been in the oil business for 58 years continuously.

Mr. Dwigans was born on a farm near Hubbard, Ohio, in 1852. Printed accounts do not mention that his father, James Dwigans, worked on the historic Drake well near Titusville, but John Dwigans, who was seven years old when Drake struck oil, says that his father, deeply interested in the experiment, left his farm in Hubbard during a slack season of the year and was employed for several weeks in helping to sink the hole which marked the real beginning of the petroleum industry. Later James Dwigans abandoned farming, turned to the oil fields of Pennsylvania and spent the rest of his life in them. He was working on a derrick floor when he died suddenly of a heart affection. Besides John, three other sons, Charles, Frank and Caleb, gravitated to vocations in petroleum.

The Dwigans family was living in Oil City, Pa., when John, then 18, worked as a teamster in the oil fields of that district. He had been doing this about a year and a half when the family moved to the Shaffer Run Field, 2 miles from Oil City. Here John worked as a tool dresser for Sam McGeehan, a drilling contractor, and soon he was working as a driller.

Why Not Be a Contractor?

At 20 John Dwigans conceived the idea of acquiring a string of tools and becoming a drilling contractor on his own account. He had only $100, but he had resourcefulness that was worth more than his cash capital. Over on the dock at Fisher's Landing in Oil City was an accumulation of drilling equipment that had found a resting place there in devious ways. The landing itself, once a center of activity in the boating of oil down the Allegheny River to Pittsburgh and other points, had fallen into disuse as a result of the introduction of pipe lines and railroad tank cars.

John strolled out on the dock and examined the heterogeneous collection of oil field appliances. Returning toward the shore he observed that the door of the landing office was ajar and that Dan Fisher, one of the owners, was looking over some papers inside. John paused at the door.

"Hello, what can I do for you?" called out Fisher.

"How much do you want for some of those tools out there?"

"That depends. Show me what you want."

John picked out the tools already enumerated.

"That all you want?"

"Yep."

"Seventy-five dollars."

"Give you 70."

"Take 'em."

And for $70 John Dwigans acquired a drilling outfit probably worth several times that amount, which he used for years on drilling contracts. The drill stem was 2¾ inches in diameter and 24 feet long. In the course of time this drill stem gave way to one 3¼ inches in diameter and 30 feet long. A giant it seemed then.

The newly acquired string of tools went to work promptly on the Pembroke farm, 3 miles down the Allegheny River from Oil City, owned by Burchfield & Burgwin, of Pittsburgh. Drillers in that period were paid 50 cents a foot.

Curtailment in 1887

Mr. Dwigans continued drilling in the oil fields of Venango and Butler Counties till 1887, when accumulations of oil stocks as the result of overproduction drove prices down to a point which removed profit. The operators organized to curtail production for a year by cessation of new drilling. This early shutdown movement was carried out with success. The price of crude advanced and the market generally was strengthened. The no-drilling agreement having removed for the time Mr. Dwigans' regular means of earning a living, he went to work in the Eclipse works of the Atlantic Refining Co., near Franklin, Pa. With resumption of drilling, he put his string of tools to work again and he took an active part in the development of the Washington, McDonald and Chartiers Fields in Pennsylvania. He worked on one well put down for Andrew Mellon, of Pittsburgh, now Secretary of the Treasury in President Coolidge's cabinet.

On one occasion in this period Mr. Dwigans found out that a derrick is useful for purposes other than those for which it is primarily intended. For instance it is a handy thing to have around when your little daughter runs off. In the summer of 1886 Mr. Dwigans was drilling a well at Hill City, an oil settlement a few miles from Franklin. He and Mrs. Dwigans decided to spend the summer in a tent near the drilling well, so they closed their house in Franklin and with their three-year-old daughter Jetta settled down to several months of life under canvas. A big wooden box sunk in the ground back of the tent provided a cellar and the interior of the tent was furnished for comfortable living. One day Jetta wandered off unobserved and soon was out of sight and hearing. Discovering the child's absence, Mrs. Dwigans called. No answer. She notified her husband and the two made a futile search. Others in the neighborhood joined them. In her excitement and fright Mrs. Dwigans, wearing a newly purchased pair of shoes, was searching about the derrick when she slipped and fell into the slush pond. She floundered a moment and then scrambled out, the thick, slimy liquid dripping from her in dark little rivers. She was not an impressive sight, but she immediately resumed her hunt for Jetta.

Aha, a Speck in the Distance

Acting on a bright idea, Mr. Dwigans climbed the 72-foot derrick and from its watchtower height he discerned his diminutive daughter toddling about between rows of corn in a distant field. He soon had the little one back in the arms of her distracted mother.

In 1892 Mr. Dwigans and his brother-in-law, George E. Kinnear, went to Indiana and began drilling gas wells under contract for the Huntington Light & Fuel Co., in the neighborhood of Vanburen, Grant County. When the gas field became depleted the two men drilled oil wells in the same territory for the Ohio Oil Co. In 1897 they went to Bremen, Fairfield County, Ohio, and started drilling a well there in association with Ernest Purvis.

Up to this time Mr. Dwigans had found no strong reason for complaining about his luck. True he hadn't found it necessary to employ a secretary to keep track of his income, but neither was he haunted by the specter of an impoverished old age. He had received fair breaks at the hands of fate. But at the Bremen well trouble showed its sinister face at every turn. Most of the things calculated to remove joy and sunshine from a driller's life and to fill it with woe, heavy affliction and bitterness of heart happened here. The tools were lost repeatedly and one prolonged fishing job followed another. When the drill wasn't stuck in the bottom, stubbornly resisting efforts to raise it to the surface, it was making discouragingly slow progress in a wet hole.

The well was completed at 2,600 feet, an unusual depth in those days, but it was such a small producer that it was without commercial value. A year had been consumed in the work. In the meantime the owners had obtained some needed equipment on credit and they owed for teaming work and for coal. Creditors refused to give the harried men any extension and all crowded in with outstretched palms at the same time.

Yes, It's a Cold World

Among the visitors in this unhappy period was a representative from the sheriff's office who attached the drilling tools and everything else that showed any prospects of being convertible into cash.

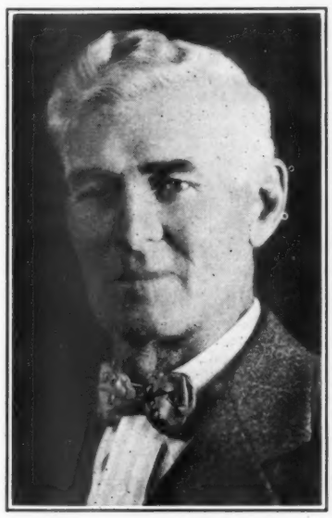
Recollections as to just how Mr. Dwigans scraped enough money together to get out of town differ. As Mr. Dwigans himself recalls the circumstances, he saved enough out of the wreck to pay the expense of moving to Warren, Ind. Another recollection in his home is that he had to borrow. All agree that he wasn't buying jewelry when he reached Warren. Instead he worked as a driller till he had accumulated enough to buy another string of tools, when he resumed contracting.

In 1907 Mr. Dwigans decided to go back to Pennsylvania and he moved to Franklin, where he remained till 1914. Here he did contract drilling besides some operating on his own account. Having had a taste of going broke, he tried it again while in Franklin and was eminently successful. This time the Franklin Savings Bank served as the medium, that institution, in which he had deposited all his money, closing its doors. He still had a string of tools, however. These he sold in 1914, going to Oklahoma, which had become the scene of big oil operations. He was employed as a driller for several years by Parish & Kinnear and after that did contract drilling. When work got slack

(Continued on Page 146)

RENO A VILLAGE RICH IN MEMORIES

Discovery of John W. Dwigans, a product of the Pennsylvania oil fields, out in Oklahoma and still drilling at 76, brought a flood of recollections of the neighborhood where this veteran driller passed his young manhood and some of his later years. John Dwigans knew those folk who lived and worked in Reno, early Pennsylvania oil town, back in the 80's—James S. Austin, treasurer of the Reno Oil Co.; John R. Penn, who succeeded Mr. Austin; Bill and Sandy Bonnett, A. L. Confer, Jim and Billy Courson, Charles Eaton and his sons, Jimmy Fitzgerald, Tom Harper and his sons, John Malloy, Jim Manross and his sons, John McDowell and his sons, Miles Mong, Levi Mook and his sons, Uncle Bill Nichols, D. P. Pierce, S. Y. Ramage, Doc Sanders, William Schruers, T. W. Smiley and the rest. Oil men all—pumpers, teamsters, drillers, refiners, producers.



JOHN W. DWIGANS

Mr. Dwigans knew Lucien Daniels, big-hearted keeper of the village store, who got a vast amount of fun out of watching boys scramble for the handfuls of candy he threw into the street and who never learned to say "no" to persons who couldn't, or wouldn't, pay their store bills. He knew the store itself, where the circle about the big stove on winter nights engaged in weighty discussion the while it used the box of sawdust for target practice. He knew L. H. Culver, superintendent of the Reno Oil Co., a familiar figure as he rode about the field in a buggy drawn by his little mare, always moving at the same steady jog. He knew L. H.'s brother, C. V. Culver, organizer of grandiose enterprises, whose chain of oil-country banks collapsed, carrying the Reno & Pithole Railroad project into the ruins with them.

Northwestern Pennsylvania is dotted with little towns left by the receding tide of oil excitement that swept that region more than 60 years ago. None is richer in memories than Reno.

Arkansas Magnetometer Study Results

Inspection of Plates Shows Several Pronounced Highs and Lows. Favorable Areas for Gas and Oil Search

By L. Spraragen

The accompanying article is the second part of the survey of Arkansas. The first part was published in the January 24 issue of The Oil and Gas Journal.

An inspection of Plate 2 shows that within this same area No. 1 the magnetometer shows several pronounced highs and lows. The principal oil fields of Union, Columbia and Nevada Counties appear to lie on a general magnetometer low. In addition to this low there are included in this same general area No. 1 the magnetometer highs at Brinkley, Star City and Camden, and the magnetometer low at Hampton.

Area No. 2

"The chances for the existence of favorable structural conditions appear to be somewhat less in area No. 2 than in No. 1, as folding and faulting in the Arkansas Coastal Plain are probably due to deep-seated causes which up to the present time have not been known to affect area No. 2."

Plate 2 shows that general area No. 2 embraces magnetometer lows at Piggot, Harrisburg and Wynne and a magnetometer high at Jonesboro. The drop in vertical magnetic intensity between the high at Jonesboro and the low at Harrisburg amounting to approximately 1,000 gamma.

"Area No. 3, at least in the southern portion, contains thick petroleum forming beds, but the chances for structural conditions are probably a little less favorable than in area No. 1 as these beds occupy the flatter portions of the Coastal Plain trough of southern United States the lowest portion of which follows generally the course of the Mississippi River."

Plate 2 shows that area No. 2 embraces magnetic lows at Lake Village, Helena and Osceola and magnetic highs at Rosedale (Mississippi) and Marion.

"In area No. 4 it seems apparent that there are but very slight chances for petroleum accumulation, as the beds in this area make up the edge of the Coastal Plain series and very probably contain neither source beds in sufficient thickness nor structural conditions favorable for the concentration of petroleum."

Plate 2 shows that area No. 4 embraces a magnetometer low at Little Rock.

"Area No. 5 contains the Ouachita Mountain system and the area immediately north and south of it. * * * Some wells drilled in this area have encountered sand stones containing petroleum residues, but no fluid petroleum has been found. It is practically certain that there is no chance for the discovery of commercial oil or gas in this region on account of the high degree of alteration and distortion of the rocks."

Area No. 5

Plate 2 shows that area No. 5 includes the magnetometer high at Benton and the magnetometer low at Hot Springs.

"Area No. 6 contains the sedimentary rocks lying in the deepest portion of the Arkansas River Valley trough which is located between the Ozark uplift on the north and the Ouachita Mountains on the south. This area contains shale beds of great thickness and there are many folds and domes present. However, analyses of the coals through this region indicate that the alteration of the rocks has been, as a whole, rather high for commercial oil accumulations. The alteration increases to the south and east. The folding also is, as a rule, more intense toward the south."

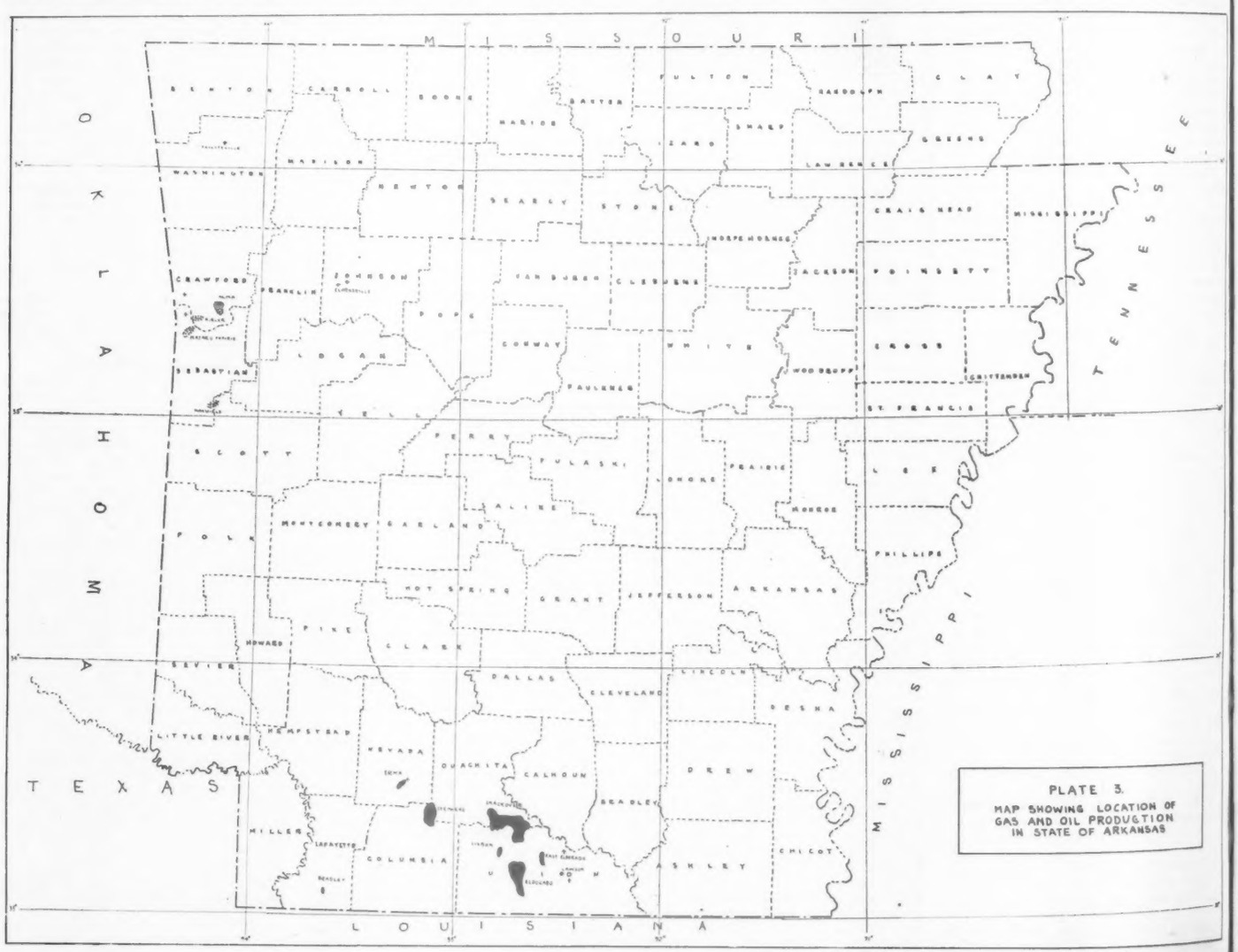
"Wells drilled in area No. 6 have encountered natural gas in the Atoka formation in the Mazzard Prairie district in Sebastian County, the Kibler, Williams and Alma district in Crawford County, the Mansfield district in Scott County, and the Clarksville district in Johnson County. A relatively small amount of gas has also been found near Plummerville, Conway County, and near Scotland, Van Buren County. Sands, sandstone and shales containing oil residues have been encountered in a few of the numerous tests which have been drilled in the Arkansas River Valley, but no fluid petroleum has been reported. It therefore seems reasonable to believe that there is little chance for commercial petroleum accumulations in this area, although there are excellent opportunities for the discovery of natural gas in commercial quantities in many of the less intense folds and other favorable structures of this area."

Plate 2 shows that area No. 6 includes the most pronounced magnetic high in the State. Clarksville, and other magnetic highs at Heber Springs, Clinton, Waldron and Fort Smith, also the magnetic low at Russellville.

Area No. 7

"Area No. 7 is in many ways similar to No. 6. The rocks exposed in this area constitute the northern edge of the Pennsylvanian and Mississippian shales and sandstones. The surface rocks, however, are much less folded than they are in

(Continued on Page 110)



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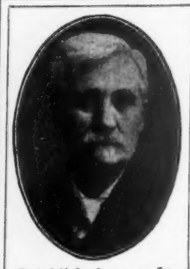

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MEMBER AUDIT BUREAU OF CIRCULATIONS

KILLING THE GOOSE

The gasoline consumers of this country will pay almost as much in gasoline taxes this year as the total appropriations for the National Government as recently as 1905.

Last year payments of gasoline taxes exceeded $300,000,000 or about as much as we spent on both the army and navy in the year before we entered the war.

With New York and Illinois added to the other 46 states now levying taxes on gasoline and a continuance of the tendency to increase the tax throughout the country it can easily be calculated that the total payments in 1929 will reach $400,000,000.

The total appropriations of Congress in 1905 were only $467,000,000 for the expenses of the whole Federal Government.

That comparison offers a startling measure of the enormous burden being laid on the oil industry and its customers and provokes inquiry as to what the limit may be.

This immense tax total has been built up in but a few years, in fact since the war. The first tax on gasoline, one cent a gallon, was imposed in Oregon in 1919.

Today there is not a single state content with a one-cent tax.

Fourteen states levy a two-cent tax.

Fourteen others levy a three-cent tax.

One state, Utah, imposes a three and a half cents tax.

Ten levy a tax of four cents.

Eight are levying a tax of five cents a gallon this year and South Carolina has a bill before the legislature to increase its gasoline tax to six cents.

In practically every legislature meeting this year bills are being considered to increase the existing tax on gasoline.

Legislators, noting the ease with which this tax can be increased and collected almost without popular protest, are astonished at their own moderation and each session itch to advance it a little more.

The people have been so "sold" on the notion that this tax will build them better roads they are reconciled to this tax as they never were to any other.

The oil companies bear the cost of collection and all the States have to do is to spend the money.

Motorists can answer for themselves whether there has been anything like proportionate improvement in the public highways since 1919 that satisfies them they have got their money's worth for these hundreds of millions of dollars paid to the various states as gasoline taxes.

In some states, indeed, legislators have been bold enough to suggest that so-called "emergencies" be met by increasing the gasoline tax and in others part of the tax has been turned into the school or general fund. As the volume of the revenue grows this temptation will be all the stronger and before long gasoline consumers will find themselves paying a larger and larger share of the general state expenses in this form.

Meanwhile, what will be the effect upon the oil industry?

What will be the popular reaction when the gasoline consumer pays as much gasoline tax as the producer of the crude and the refiner together get for gasoline?

In several states that has already been approached. The tax in some states has equalled the total cost of distribution, railroad transportation, tank wagon and service station.

What other industry has to carry in cost to consumers a tax equal to the cost of raw material and manufacture or to the cost of distribution?

Yet, thanks to the continually greater efficiency of the oil industry, in both the producing and manufacturing branches, the price of gasoline to the consumer has not been increased, even with this enormous tax added.

In other words the oil industry's increasing efficiency has been paying this tax. The advantages which the industry had a right to assume it would gain by this extra effort have been absorbed by the states in taxes on its product and the industry has had to struggle through recurrent years of depression in consequence.

The point has been reached where any further increases in gasoline will mean a direct increase to the consumer. This is the limit that should warn the tax levying legislators to halt.

If the public finds gasoline prices increasing because of increased gasoline taxation there will be a revulsion of popular sentiment. People will not keep on paying three and four hundred millions of dollars a year without asking whether they are getting their money's worth.

They will not be content with the so-called improved roads that masquerade as such in most states. They will be likely to look into the overhead cost of administration and maintenance and make other inquiries that may not be answered satisfactorily.

The oil industry is, of course, vitally interested in the building of good roads. The more good roads the more gasoline consumed. But there must be the good roads, and they must be maintained as good roads.

The immediate question is whether the gasoline consumer is not now paying enough to have these good roads.

Over a billion dollars a year are now being spent on our public highways. Can any motorist who has been over the country imagine where that money has been profitably expended?

The oil industry is being deprived of the legitimate rewards of its efficiency through the burden of taxation laid on its chief product. It has been passing through the most trying crisis in its history handicapped by the increasing load of gasoline taxation depressing its markets.

What would be the effect of a 25 per cent tax on every loaf of bread, every gallon of milk, every pair of shoes, on the baking, milk or shoe industries? Or any other industry producing an article of general use?

Taxation that hampers the industry that supplies the tax is simply another case of killing the goose that lays the golden eggs.

The situation is rapidly developing into a parallel with that of the federal taxation on business a few years ago which was driving capital out of productive industrial and commercial enterprises into untaxable state and municipal securities, threatening a slackening of our whole progress. It was not until Secretary Mellon and other economists had driven home this object lesson upon Congress and the country that the tax rate was reduced, business was encouraged, and the revenue actually increased where it had begun to decline.

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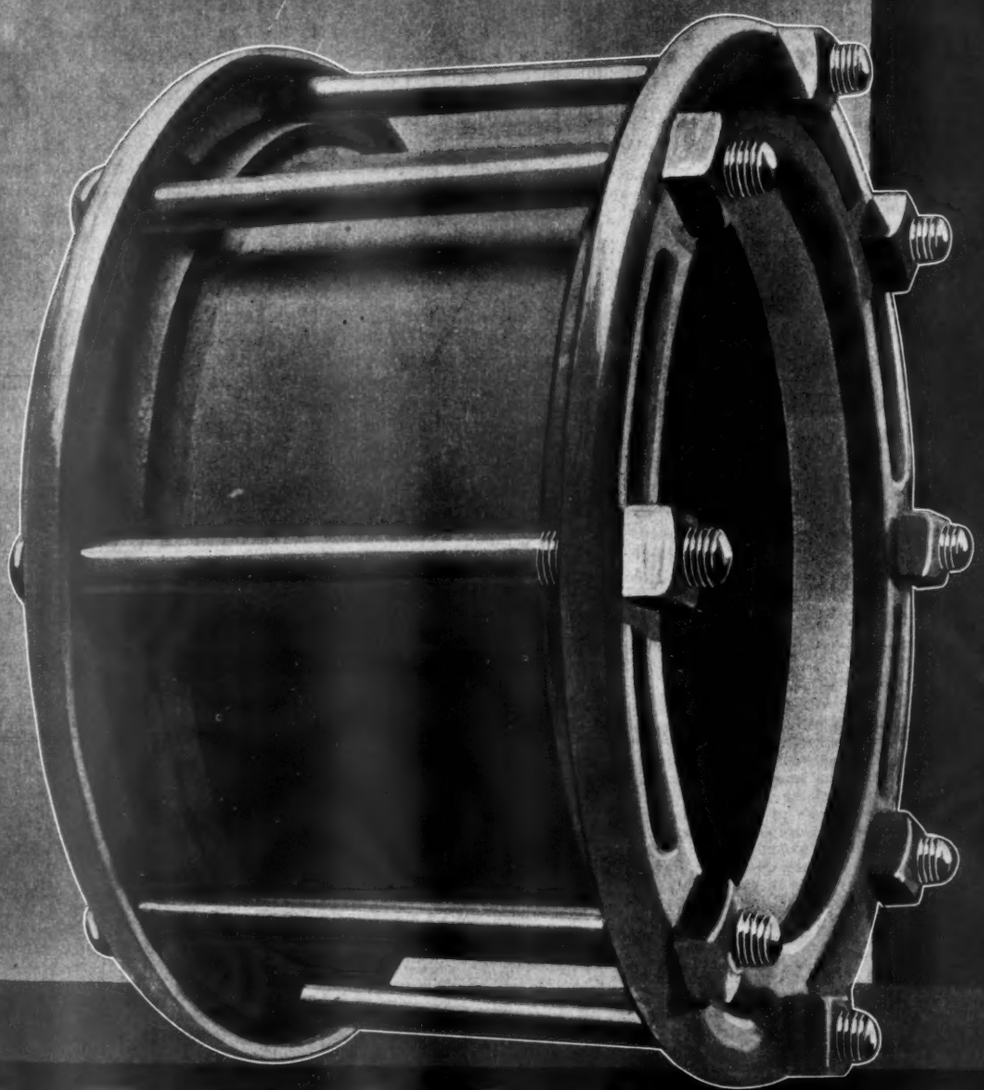

DRESSER COUPLINGS DOMINATE

AUSTRALIA'S SEARCH FOR PETROLEUM CONTINUES DESPITE ALL DIFFICULTIES

By Lionel G. Wigmore
Editor "Oil," Sydney, N.S.W.

SYDNEY, Australia, Jan. 18.—The oil search during 1928 in Australia, Papua (her New Guinea possession) and ex-German New Guinea, over which she holds a mandate, reached a stage at which 1929 opens as a period of expectancy, particularly as to results at Roma, Queensland. Approximately 400 applications for prospecting permits have been received by the Queensland Mines Department, and some 25 companies are drilling or about to spud in that state alone.

The organization to whose pioneer work the present stage of development in Queensland is due is the group comprising Lander Oil Fields (Aust.) Ltd., the Roma Oil Corp., Ltd., and Builders, Ltd. The corporation carried on at the stage at which Lander was obliged to leave off, but Lander is about to resume. Until several months more drilling have been done, however, it seems that hopes will hinge mainly upon developments at the Roma Oil Corp.'s Nos. 1 and 2 wells. No. 1 penetrated wet gas sands, and the well yielded an emulsion of light oil and water. Opinion has been divided whether this oil is a condensate of the gas, but recent developments point to there being oil deposits of unknown quantity, and heavier than that hitherto obtained, independently of what might be condensate. It was deemed wise to conserve this well, and an absorption plant was installed recently while the drilling of No. 2 proceeded. This plant yielded over 7 pints of gasoline per thousand feet of gas in a 90-minute preliminary run. Exhaustive further tests and various adjustments are now being made, and it is thought the commercial yield will be about 4 pints per thousand feet. Meanwhile the company's vehicles and plant are being run on this product.

The depth of No. 2 January 15 was 3,913 feet. Cores from the well, which is being drilled with a rotary plant in charge of Roy and C. Evans, who gained their experience in America, indicate a consistent anticlinal dip of between 7 to 8 degrees in comparison with No. 1, a few hundred yards distant. The gas zone in No. 2 was entered at 3,647 feet and continued to 3,913 feet, at which depth operations were suspended because it had become necessary to shut off the gas from the boilers and clean out sand which had silted up in the bottom of No. 1. A marked increase of carbonaceous matter was reported from the recent depths in No. 2, and a specimen from 3,867 feet gave characteristic reaction to ether. Directly below this formation, 3 feet of brown diatomaceous shale, classified as similar to the shales of the Monterey Field, California, were revealed in the core. At between 3,891 and 3,893 feet a band of hard grit with concretionary lime was passed. Extensive core drilling by Builders, Ltd., is yielding what are described as satisfactory results in determining structures in surrounding areas. Incidentally, a sharp difference of opinion exists between geologists, drillers, and others as to the comparative merits of rotary and percussion drilling to prove the field. Percussion plants are in the majority, one reason being that they are more readily obtainable and the initial cost is less, but additional rotary plants

(Continued on Page 151)

AMERICAN GAS ASSN. EXECUTIVES HOLD SESSION IN LOS ANGELES

By L. P. Stockman

LOS ANGELES, Calif., Feb. 9.—The advisory council and executive board of the American Gas Association held a very interesting and important two-day session at the Biltmore Hotel in Los Angeles last week and at the conclusion of the meeting on February 7 the delegates became guests of the Pacific Coast Gas Association. A. B. Macbeth, president of the Southern California Gas Co.; A. B. Day, president of the Los Angeles Gas & Electric Corp.; P. S. Wade, president of the Southern Counties Gas Co., and officials of the Pacific Coast Gas Association escorted the delegates by motor car from San Bernardino to Los Angeles, a stop being made enroute at the celebrated Mission Inn at Riverside.

The Pacific Coast conference which, incidentally, was the second held in this section since organization of the American Gas Association in 1916, was called to order by C. H. Dickey, president of the Pacific Coast Gas Association, who delivered a brief welcome and turned the gavel over to F. S. Wade, chairman of the committee on arrangements and program. Oscar H. Fogg, president of the American Gas Association, responded and delivered his annual message.

Every section of the country was covered in the national survey which dealt with present conditions and future possibilities. Guy W. Talbot, president of the Portland Gas & Coke Co., covered the Pacific Northwest; A. F. Hockenbeamer, president of the Pacific Gas & Electric Co., the Pacific Southwest; Samuel Insull, Jr., president of the Midland Utilities Co., the Middle West; Henry C. Morris, president of the Dallas Gas Co., the South; Floyd Parsons, the Atlantic Seaboard; F. C. Freeman, vice president of the Providence Gas Co., New England, and Arthur Hewitt, general manager of the Consumers Gas Co. of Toronto, Canada. E. A. Bauer, general manager of the Worcester Gas Light Co., endorsed the proposed co-operative advertising by gas companies on the Pacific Coast and described campaigns carried on in the New England area, whereby gas consumption and the demand for water heaters, incinerators, refrigerators and ranges was greatly stimulated by newspaper advertising. He was of the opinion that similar co-operative advertising on the Pacific Coast would meet with equal success.

Progress of Gas Utilization

Alexander Forward, managing director of the American Gas Association, told the delegates and visitors that while the gas industry has more than kept step with general business registering a new high record of sales in 1928, he believed there is need for more efficient gas-burning industrial equipment and for further development of salesmanship. Revolutionary developments in the gas industry were described by the speaker who said that an entirely new method of melting brass and other nonferrous metals has been developed.

Clyde H. Potter, chief commercial agent of the Southern Counties Gas Co., expressed the belief that western engineers lead eastern technical men in gas development but that eastern gas sales and merchandising methods appear to be ahead of western methods. The gas industry in the United States, Mr. Potter told the industry's leaders, represented an investment in excess of $4,500,000,000.

H. C. Abell, vice president of the Electric Bond & Share Co., in one of the conference addresses, stated that research activities of the gas association include besides those of a very technical nature, such problems as scientific management, education, correlation of all branches of the various activities in the industry and public relations. He especially stressed the point that the gas industry cannot stand still but that it must progress through research to keep pace and bring

(Continued on Page 151)

High Spots in Field News

NORTH LOUISIANA-ARKANSAS

Drilling campaign planned in Monroe district. Mississippi projects under way.

GULF COAST

Pure Oil Co. well at Sweet Lake is biggest producer there, at rate of 360 bbls. initially, 6 per cent mud and water.

CALIFORNIA

New deep zones at Santa Fe Springs will result in deepening of 30 wells. Production of state due for further increase.

SOUTHWEST TEXAS

Well half mile southeast of production in Refugio Field flowing at rate of 1,000 bbls. Well at extreme north end came in with gas blowing off crown block. Joe Bruner well of Humble company increased to 200 bbls. hourly.

NORTH TEXAS

Deep well in Palo Pinto County encountered showing of wet gas which increased to 1,000,000 feet and is reported increasing.

Shamrock area, Wheeler County, has gas well estimated at 81,000,000 feet.

OKLAHOMA

Largest well in Misener sand pool at Maud, Gypsy Oil Co.'s No. 3 Miller, continued its decrease. East offset of Phillips Petroleum Co. showed slight improvement on deeper drilling.

New Wilcox sand discovery in Allen Pool.

WEST TEXAS

In well mile due west of Settles Pool production live oil rose in hole from total depth of 2,231 feet with 16 feet of core hole to drill out.

Leck area well tests 90 bbls. an hour with 70,000,000 feet of gas, best yet completed there. Empire company's No. 2 Daugherty rated as 1,500-bbl. producer.

Hendricks and Yates Pools have several good completions.

Decrease in runs to storage in West Texas despite increase in production.

Late News from the Field

WEST TEXAS

FORT WORTH, Tex., Feb. 12.—Plug was drilled in Howard County Oil Corp.'s No. 1 Kloh, SE NW NE, Section 5, Block 32T-2S, Howard County, and 250 feet of oil rose in the hole from a total depth of 2,231 feet. The oil is described as live oil and there is 16 feet of core hole to drill out. The well is more than a mile due west of Settles Pool production and more than half a mile north of the Plymouth company's Settles extensioner.

The Texon Oil Co.'s record deep well in Reagan County reached a new peak of 1,947 bbls. today.

OKLAHOMA

The largest well in the Misener sand pool at Maud continued its decrease and on Tuesday morning of this week, flowed 6,530 bbls., a drop from 8,200 bbls. which it made the previous day. This is the Gypsy Oil Co.'s No. 3 Miller, in Section 18-8-5. The east offset which was producing 170 bbls. daily was drilled deeper with slight improvement. It is the Phillips Petroleum Co.'s No. 1 Miller, SW cor. NW SW, Section 17-8-5, and it was drilled to a total depth of 4,029 feet, a total of 15 feet into the sand. The Phillips well flowed 368 bbls. in 16 hours.

In the Wilcox sand pool of Maud, the Barnsdall Oil Co.'s No. 4 Coker, in Section 11-8-5, swabbed 1,040 bbls. in 17 hours from Wilcox sand 4,151-58 feet. A light Wilcox well for this area is the Gypsy Oil Co.'s No. 1 Coker, NE cor. SE, Section 10-8-5, which had the sand 4,258-67 feet and swabbed 385 bbls.

In the north end of the St. Louis Pool, T. B. Slick and the Maud Oil and Gas Co.'s No. 2 Davis, in Section 18-7-5, is increasing in cut oil and is now cutting 40 per cent, and producing 3,200 bbls. daily.

West of St. Louis, the Magnolia Petroleum Co.'s No. 1 Gassoway, in Section 12-7-4, is dry and abandoned at 4,536 feet in the Wilcox sand.

In the Maud area, the Pure Oil Co.'s No. 1 Wiley, SE cor. NW, Section 7-8-5, found a hole full of water in the Simpson sand at 4,302 feet, and this is usually followed by a hole full of water in the Wilcox horizon.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Feb. 12.—Mission Drilling Co.'s No. 1 Nellie Cummings, a half mile southeast of production in the Refugio Field, in 3,700-foot sand, came in at 10 o'clock last night flowing at the rate of around 1,000 bbls. daily with apparently no water. Houston Gulf Gas Co.'s No. 4 O'Brien, at the extreme north end of the field, at 2,420 feet came in, gas blowing the crown block off. It is now under control. Humble company's No. 1 Moses & Baggett, in the north end of Joe Bruner Field, came in Monday and has increased to 200 bbls. hourly. Cranfill & Reynolds' No. 1 Webb, near the Empire wildcat producer on Norwood farm, in Gonzales County, at 3,850 feet is dry, compared to 3,780 feet for Empire's No. 1 Norwood.

Ranger Most Active North Texas Area

Three Offsets Started to Fry Sand Discovery Well in Coleman County. Cold Weather Affects Operations

By James H. Dameron
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Feb. 11.—Gripped in the throes of the first real cold wave of the winter, North Texas suffered a general shutdown a few days of the past week and production likewise was on a downward trend. Most of the important field developments were centered around the Ranger district.

In Coleman County, McDonald, Campbell & Herbert uncovered a new Fry sand pool last week with No. 1 Weaver, in Subdivision No. 9 in the Andrew Gabel Survey No. 271 at 1,829½ feet. The well was estimated to be good for anywhere between 200 and 300 bbls. of high gravity crude daily.

The owners decided to shoot it late last week and while running the shot it went off and shot the casing in two. A bad fishing job resulted. Before the shot the well was good for around 14 bbls. per hour and after the fishing job developed it was making around 75 bbls. daily.

Three offsets have been started around the wildcat producer and will tell their story in a short while, barring accidents. Some geologists are of the opinion the pool may develop along lines similar to those characterizing development in the Morris Pool in Coleman County. Its discovery well had a good initial production, but for the most part the subsequent wells were big disappointments.

Biltmore Oil Co.'s deep well in the SW cor. of Block 1,745, in Palo Pinto County, is the center of much interest. This well encountered a showing of wet gas at 4,034 feet, which increased to 1,000,000 feet daily and is reported increasing. Casing is being run and a test will be made shortly. In the event a pool is discovered in this region it is not expected to develop to great prominence because of the irregularity of the black lime. However, many geologists hold that the productive spots that are found will more than likely pay off well.

Production of the Ranger district increased 1,034 bbls. over the previous week due entirely to the steady holding of new flush production recently brought in in Shackelford County. Brown County registered another decline as did other counties in the district.

Wichita Falls District

Wichita Falls district was more seriously affected by the cold wave than Ranger so far as drilling was concerned and the district fell a little below its usual quoto of new production. Daily average production in the district has been declining rather steadily since the first of the year.

Osage Oil & Gas Co.'s No. 1 Clayton in the Lewis Knight Survey, 2 miles southeast of Bryson, drew the interest of the district to the new Jack County area when it picked up a showing of dead oil and around 250,000 feet of gas in sandy shale at 2,888 feet. The well is shut down at 2,945 feet, but is scheduled to drill into the second Strawn early this week.

The six producers in that area are holding up good at this stage of their life. Panhandle Co.'s two wells on the Daugherty are averaging 125 bbls. and the two on the Smith lease are making 110 bbls. The same company's well on the McKelvey lease is doing 60 bbls. daily. Prairie Oil & Gas Co.'s one well on the Bryson lease is making 165 bbls., The Texas Company's one well on the Jones lease is making 125 bbls. and Leidecker and associates' well on the Loving lease is averaging 230 bbls.

Texas Panhandle

Several Panhandle operators were concerned with a decision handed down in District Court in Travis County which affects the title on 525 acres in the Panhandle that is valued at around $907,000. The State of Texas claimed title to the land and was given title to it by the court decision. The same decision permits the operating companies to remove their equipment from the property.

Gulf Production Co. will suffer the greatest if the decision is not reversed. That company's holdings affected by the suit total $400,000; the Marland Production Co., $195.644; and Phillips Petroleum Co., $301,778. The case is expected to be carried to higher courts.

Southern Exploration Co.'s No. 2 McConnell, Section 174, Block 3, in the McConnell area on the Gray and Carson County line, was one of the surprise wells of the week. It flowed 600 bbls. in 18 hours from pay at 3,207-21 feet.

Barnsdall Oil Co.'s No. 1 Hagy, which promised to give the Armstrong Pool in Moore County a long northern extension, was completed for 15 bbls. on the swab after three light shots. The well encountered water at 3,275 feet and was plugged back.

An unusual and big gas well was completed in the Shamrock area of Wheeler County by Neudigate and associates. Their No. 2 Sitler is rated an 81,000,000-foot producer from 2,107-10 feet. The well ranks with the largest in the Panhandle.

Panhandle's production dropped 2,170 bbls. during the week due to the cold weather, but most to the falling off of wells in the Lefors area.

PANHANDLE COMPLETIONS

Carson County

Navajo Oil Co.'s No. 2 Poling, 660 feet from west and 330 feet from north lines north 30 acres, SW, Section 22, Block X-2, T.T.R.R. Survey, was drilled to a total depth of 3,870 feet, plugged back to 3,265 feet, was shot with 50 quarts at 3,245-65 feet and made 8,000,000 feet of gas. Skelly Oil Co.'s No. 10 Schafer, located 1,320 feet from west line and 330 feet from south line of N half, Section 188, Block 3, I.&G.N.R.R. Survey, made 175 bbls. at 3,200-05 feet and 3,227-30 feet and was drilled to a total depth of 3,237 feet.

Gray County

Skelly Oil Co.'s No. 1 Jackson North was shot with 40 quarts at 3,030-53 feet and swabbed 135 bbls.

Moore County

Barnsdall Oil Co.'s No. 1 Hagy was shot with 10 quarts at 3,256-65 feet and also with two 5-quart shots at 3,224-36 feet and swabbed 15 bbls. daily after having been drilled to a total depth of 3,275 feet and plugged back to 3,267 feet.

Wheeler County

Neudigate and others' No. 2 Sitler made 81,000,000 feet of gas at 2,107-10 feet.

Estimated Daily Average Production
NORTH TEXAS
Week ending February 9

	Bbls.
Panhandle district—	
Carson County	5,890
Gray County	21,545
Hutchinson County	26,615
Moore County	2,205
Potter County	20
Wheeler County	640
Total this week	56,915
Total last week	59,085
Decrease	2,170
Wichita Falls district—	
Archer County	17,359
Baylor County	77
Clay County	436
Cooke County	2,572
Jack County	1,747
Montague County	7,205
Throckmorton County	706
Wilbarger County	27,059
Young County	7,562
Wichita County	28,807
Total this week	93,530
Total last week	94,149
Decrease	619
Ranger district—	
Brown County	8,950
Callahan County	3,725
Coleman County	3,675
Comanche County	1,200
Palo Pinto County	400
Ranger	5,814
Shackelford County	13,000
Stephens County	7,042
Total this week	43,806
Total last week	42,772
Increase	1,034
Grand total this week	194,251
Grand total last week	196,006
Decrease	1,755

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week ended February 9

CARSON COUNTY

Company, well, farm, name, section and block—	Remarks—
Denson et al's No. 1 W. E. Cobb, 930 ft. from N line, 280 ft. from E line, W½ NW, Sec. 184, Blk. 2, I.&G.N. Sur.	Drlg. 1,680 ft.
Delmar Oil Co.'s No. 3 Noel, 330 ft. from E line and 990 ft. from N line W½ SE, Sec. 198, Blk. 3	Drlg. 1,065 ft.
Holmes et al's No. 1 Quinn, 330 ft. from S and 330 ft. from E line SW, Sec. 7, Blk. 9, I.&G.N. Sur.	Run. 8-in. 2,200 ft.
Marland Prod. Co.'s No. 1 Burnett-L, 440 ft. S and 1,320 ft. W of NE cor. Sec. 79, Blk. 4, I.&G.N.R.R. Sur.	Spud.
McElroy Oil Co.'s No. 1 Lewis, 330 ft. S and E of NW cor. of SW of NE Sec. 115, Blk. 4, I.&G.N.R.R. Sur.	Rig.
Morris et al's No. 1 Barnard, NW cor. SW SE, Sec. 44	Drlg. 1,700 ft.
Reynolds et al's No. 1 E. Cooper, 330 ft. from S line and 330 ft. from E line NW, Sec. 5, Blk. 9, I.&G. N.R.R. Sur.	Drlg. 2,490 ft.
Spartan Oil Co.'s No. 1 S. Bednorz, NW cor. E½ NW, Sec. 202, Blk. 3, I.&G.N. Sur.	Drlg. 2,555 ft.
Skelly Oil Co.'s No. 11 Schaffer, 330 ft. from S line 990 ft. from the W line, Sec. 88, Blk. 4, I.&G.N. R.R. Sur.	Drlg. 1,100 ft.
Skelly Oil Co.'s No. 12 Schaffer, 330 ft. from S line and 1,650 ft. from the W line of Sec. 88, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 480 ft.
Travis et al's No. 1 D. A. Harrell, C NE NE, Sec. 162, Blk. 7, I.&G.N. Sur.	Drlg. 2,670 ft.
Ware et al's No. 1 Ware, 990 ft. S and 400 ft. E NW cor. Sec. 18, Blk. 3, A.B.&M. Sur.	Drlg. 3,655 ft.

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 M. Slemmons, SW cor. Sec. 73, Blk. M-17, B.S.&F. Sur.	Rig blown down.
Mystery Oil Co.'s No. 1 J. L. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur.	S.D. 510 ft. for csg.

CHILDRESS COUNTY

C. L. Soane et al's No. 1 B. P. Smith, Sur. 49, F. P. Knott lands	Drlg. 4,138 ft. (corrected).
The Texas Co.'s No. 1 Smith, 100 ft. each way from NW cor. Sec. 174, Blk. H, W.&N.W. Sur.	Hole full sulphur wtr. 3,985 ft.; S.D. 4,605 ft.

COCHRAN COUNTY

V. T. Bolin et al's No. 1 C. C. Slaughter, 1,650 ft. E and 660 ft. S. of NW tract, League 118, Knox County School land	Rig and S.D.

COTTLE COUNTY

Expltn. Co.'s No. 1 Richards	Drlg. 2,385 ft.
Expltn. Co.'s No. 4 Matador Land & Cattle Co., C, Sec. 46, J. H. Stephens Sur.	Drlg. 3,120 ft.
Skelly Oil Co.'s No. 1 J. H. Cannon	H.F.W. 3,558 ft.; S.D. 4,170 ft.
Sun Oil Co.'s No. 1 T. B. Yarborough, 485 ft. S and 2,460 ft. E NW cor. Sec. 551, Block H, W.&N.W. Sur.	Fishing 3,440 ft.

DONLEY COUNTY

Beaudoin et al's No. 1 Ball, 1,075 ft. from N line and 985 ft. from E line, Sec. 22, Blk. E, D.&P.R.R. Sur.	Location.

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Wichita County

Barnsdall Oil Co.'s No. 1 Hagy was shot with 10 quarts at 3,256-65 feet and also with two 5-quart shots at 3,224-36 feet and swabbed 15 bbls. daily after having been drilled to a total depth of 3,275 feet and plugged back to 3,267 feet.

Wheeler County

Neudigate and others' No. 2 Sitler made 81,000,000 feet of gas at 2,107-10 feet.

WICHITA DISTRICT COMPLETIONS
Week Ending February 9

Archer County

E. J. Stump Co.'s No. 1 Ford was dry and abandoned at 1,851 feet. Underwood Drilling Co.'s No. 3 Wilson was dry and abandoned at 1,686 feet. H. Donoho and others' No. 4-A Andrews was dry and abandoned at 900 feet. Ted Harris and others' No. 2 Roller estate was dry and abandoned at 1,531 feet. Humble Oil & Refining Co.'s No. 1 Kunkel and others made 72 bbls. at 1,176-79 feet. H. Keller and others' No. 1 King was dry and abandoned at 1,553 feet. Hines and others' No. 2 Phillips made 38 bbls. at 1,179-85 feet.

Clay County

Bain & Clark's No. 7 Landrum was junked at 195 feet.

Cooke County

Pure Oil Co.'s No. 4 Embry swabbed 147 bbls. at 1,384-1,400 feet. Richardson's No. 1 Whaley was dry and abandoned at 1,995 feet.

Throckmorton County

Jones and others' No. 1 Kunkle was dry and abandoned at 780 feet.

Young County

Allday and others' No. 1 Orr was dry and abandoned at 565 feet. Bullington, Lee & Pendleton's No. 7 Boone made 20 bbls. at 528-44 feet. Pennell & Bratcher's No. 1 Drum was dry and abandoned at 671 feet. Prairie Oil & Gas Co.'s No. 6 Campbell was dry and abandoned at 1,034 feet. Richards' No. 2 Campbell made 12 bbls. at 883-87 feet. Riggs & Oliphant's No. 1 Prideaux was dry and abandoned at 500 feet. Stevens & Streeter's No. 1 Vardy was dry and abandoned at 1,000 feet. Underwood Drilling Co.'s No. 4 Campbell made 6 bbls. at 896-903 feet and was drilled to a total depth of 1,030 feet. Walton and others' No. 2 Prideaux made 27 bbls. at 460-65 feet. Williams' No. 2 Bagley was dry and abandoned at 649 feet. Wooten & Reed's No. 1 Stewart was dry and abandoned at 610 feet.

Wilbarger County

Consolidated Oil Co.'s No. 1 Waggoner made 20 bbls. at 1,299-1,304 feet. Fain McGaha Oil Corp.'s No. 31 Waggoner-S made 90 bbls. at 2,283-2,403 feet and was drilled to a total depth of 2,422 feet. Its No. 2 Waggoner-W made 145 bbls. at 1,856-59 feet and was drilled to a total depth of 1,860 feet. Laalaph Oil Co.'s No. 1 Waggoner made 250 bbls. at 1,997-2,004 feet and was drilled to a total depth of 2,014 feet. Phillips Petroleum Co.'s No. 2 Waggoner-NN made 8 bbls. at 2,302-25 feet. Waggoner Refining Co.'s No. 14 Waggoner-H made 225 bbls. at 2,327-38 feet and 2,394-2,408 feet.

Wichita County

American Refining Properties' No. 1 Hooks was dry and abandoned at 690 feet. Clark & Dunaway's No. 1 Allingham was dry and abandoned at 2,002 feet. C. A. Evert's No. 2 Myers made 5 bbls. at 1,360-78 feet. Mount & Graham's No. 1-B Burnett made 3½ bbls. at 1,567-70 feet. Panhandle Refining Co.'s No. 7 McCarty was dry and abandoned at 1,850 feet. Producers Oil Co.'s No. 1 Allen & Kemp made 41 bbls. at 1,633-45 feet. Shappell Oil Co.'s No. 10 Mc-

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Leck Area Well Best Yet Completed

Second Well Rated 1,500 Bbls. Good Wells in Hendricks and Yates Pools. Decrease in Runs to Storage

By James H. Dameron
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Feb. 11.—Another decrease in runs to storage despite an increase in production, big wells in the Hendricks and Yates Pools, new pipe line projects, showings in wildcats in Irion and Taylor Counties and developments in the Roberts and Settles areas of southern Howard County supplied the gist of news from West Texas during the week. In addition two good wells, one the best yet drilled, were brought in in the Leck area of northern Winkler County.

Of these two producers Warner Quinlan Co.'s No. 1 Daugherty, SE cor. S half NW Section 3, Block 74, tested 90 bbls. per hour at a total depth of 3,105 feet along with 70,000,000 feet of gas. This well is the best that has been completed in the Leck area and is in the northwest part of the present producing limits of the pool.

In the same pool but in the SE cor. of the W half of the same section Empire Gas & Fuel Co.'s No. 2 Daugherty is rated a 1,500-bbl. well without any water from a total depth of 3,202 feet. This well offsets another that is making 25 bbls. per hour.

After many months of effort the V. T. Bolin wildcat test near Kermit and in Section 4, Block B-5, has finally been put on production and is making around 30 bbls. daily on the pump. This well was taken over by McGinley Corp., drilled to 3,211 feet and plugged back to 2,860 feet and shot. Considerable trouble is still being experienced with the hole and the operators are experimenting with tubing at various depths to get a better production.

Hendricks Had Best Well

The best well of the week in the Hendricks Pool was Prairie Oil & Gas Co.'s No. 5 Hendricks, Section 3, Block B-12, in the south extension of the pool. The well was drilling at 2,885 feet when returns were lost and 250 tons of mud was pumped in the hole in an effort to get returns. It was decided to bail and the hole was cleaned and the well flowed open four hours. After cleaning itself the well made 1,263 bbls. the first hour, showing 2 per cent mud, and was completed and rated a 1,300-bbl. hourly producer, 2 per cent mud, by the proration umpire.

In the same part of the pool Southern Crude Co.'s No. 1, T-89-J, NE cor. Section 9, Block B-12, was completed at a total depth of 2,920 feet, making 500 bbls. per hour, 24 per cent water.

According to figures compiled by the Winkler County proration umpire, that county produced 5,324,000 bbls. during the first month of the year. For the same period scout reports show a total movement of 4,266,277 bbls. of Winkler County crude at a daily average rate of 137,622 bbls. Of this amount 3,106,355 bbls. was pumped from the field in trunk line, 794,878 bbls. shipped by tank cars and 365,029 bbls. run to near-by refineries.

Down south in the O'Brien area Barnsdall Oil Corp. has abandoned its test offsetting the discovery well of the pool. That company's No. 1 Morton had a show of oil at 2,880 feet, a little sulphur water at 3,128 feet and more at 3,258 feet. Preparations are being made to plug at 3,262 feet.

Yates Well Gauges 120,000 Bbls.

Mid-Kansas Oil & Gas Co. and Transcontinental Oil Co.'s No. 12 Yates-C, in the northwest part of Section 60, Block 1, added another "he" well to the Yates Pool when it gauged better than 120,000 bbls. daily on the basis of an hourly gauge. When the gusher was opened and permitted to flow through one 4-inch line and a 6-inch line it made 5,002½ bbls. in 30 minutes from a total depth of 1,362 feet. The well was shut in and more flow lines are being connected before giving it a final gauge for proration purposes.

With four new wells added during the last proration gauging period the Yates Pool potential production is figured to be 4,560,618 bbls. Three old wells were retested for the period February 1-15 and the field has 291 producers.

The Yates Pool featured prominently in trades during the week with W. A. Moncrief, chairman of the Yates Pool proration committee, as one of the principals in one trade. Mr. Moncrief was chairman of the committee when he was in charge of Marland Production Co.'s Texas operations. When he resigned his work was so satisfactory to the committee he was prevailed upon to remain as chairman of the committee.

Moncrief purchased the Mazda Oil Co.'s half interest in the Savoy-Mazda Co.'s 80 acres in the NE of Section 24 for a consideration of $150,000, $100,000 in cash and the remainder in oil. The Savoy company will retain operation of the property. The lease has three wells with a combined potential production of 7,004 bbls.

The Pecos River Bed property again changed hands when Grayburg Oil Co. of San Antonio bought it from A. L. Hawse. No consideration was learned but it is reported to involve stock in a syndicate being organized which will include the Grayburg company. The River Bed lease has seven wells with a potential production of 9,356 bbls. This lease has changed hands several times since Allsman and Bell first developed it.

Settles Area

With the completion of Plymouth Oil Co.'s mile southwestern extensioner of the Settles area in southern Howard County as a 1,198-bbl. producer, interest turned to the Howard County Oil Co.'s test to the north. Plymouth company's No. 1 Kloh, NE cor. SW Section 5, Block 32, T-2-S, had pay at 2,264-97 feet. The first hour it made 62 bbls. and 359 bbls. the first six and a half hours.

Howard County Oil Co.'s well is about three-quarters of a mile to the north and topped lime at 2,185 feet. It has a surface elevation of 2,729 feet and cored saturated lime at 2,233-36 feet. Six-inch pipe was set at 2,201 feet and the well is scheduled to be drilled in the early part of the week. In the event it makes a producer it will open a wide scope of territory for development in the Settles area.

Howard County is the most active county in West Texas at this time so far as field work is concerned. The Texas Railroad Commission recently extended the proration period three months from February 15, but declined to raise the allowable production from the lime producers above 35,000 bbls. Several operators requested the allowed quota be increased to 50,000 bbls. daily.

Texon Oil & Land Co.'s No. 1-B University in the Big Lake Pool, the world's record deep well, seems to be headed for new peaks. After reaching 1,800 bbls. daily the well dropped down a little under that figure for a few days. However, during the latter part of the week it climbed to a new peak of 1,850 bbls. daily with a little increase in gas.

Sutton County Test

Phillips Petroleum Co. is going to drill a 7,000-foot test in Sutton County with No. 1 Holman, Section 25, C.C.S.D.& R.G.N.G. Survey. Progress is being delayed at the present by a fishing job at 5,770 feet.

Kingwood Oil Co.'s No. 1 Suggs in Irion County had another deep show at 5,660 feet in sandy lime, but is drilling ahead in hard lime at 5,715 feet. Interest in Irion County was centered around Mertzon Oil Co.'s No. 1 Horney Section 2, Block 3, H.&T.C. Survey. The well encountered a show of 37 gravity oil at 1,225-26 feet that is estimated good for between 8 and 10 bbls. daily. This well is half a mile north of Hill and associates' test on the Horney land, which had a good shallow show. The Mertzon company is comprised of Mertzon people.

Mid-Continent Oil & Gas Co.'s No. 1 Taylor, Lot 3, Section 18, Guadalupe County School Land, Taylor County, was the most important well in that area during the week. After getting a small show of oil at 2,384-91 feet the well encountered 800 feet of oil at 2,450-55 feet and was drilled to a total depth of 2,461 feet. It is to be tested this week.

Simms Oil Co.'s No. 1 Ellwood, Section 29, Block 19, T.&P. Survey, Mitchell County, unexpectedly encountered 2,000,000 feet of gas at 600 feet and the rig caught fire and burned. The well is in the south central part of the county near the Sterling County line.

Pipe Lines and Shipments

Magnolia Pipe Line Co. is making a survey for an 8-inch line from its tank farm in Section 6, Block B-11, Winkler County, to its Midland tank farm and main line pump station on an 8-inch line running east. Humble Pipe Line Co. is making a survey for the extension of its 8-inch line to the Leck area of northern Winkler County to southeastern Lea County.

With pipe line companies increasing their shipments from West Texas and local refineries taking more oil another cut was made in runs to steel storage in the face of a small increase in production. Runs to storage are down to 46,000 bbls. daily while two weeks ago they mounted to 80,000 bbls. daily.

The following is a comparative table of crude movements in West Texas:

Pipe Line Runs

	Last period
Atlantic P. L. to Port Arthur, Tex.	34,700
Gulf P. L. to coast via Ranger, Tex.	23,065
Humble P. L. to coast via Comyn, Tex.	41,506
Humble P. L. to Ingleside	50,563
Illinois P. L. Co. to Del Rio	22,500
Magnolia P. L. to coast via DeLeon, Tex.	28,470
Pasotex P. L. to El Paso, Tex.	8,858
Shell P. L. to Healdton, Okla.	39,967
Total	249,709

Tank Car Shipments

American Pet. Co., Pyote, Tex.	2,357
Cosden & Co., Big Spring, Tex.	4,867
Shell Pet. Co., Monahans, Tex.	2,951
Skelly Oil Co., Pecos, Tex.	1,465
Southern C. O. P. Co., Wickett	12,959
The Texas Co., Monahans, Tex.	923
Burford Ref. Co., Pecos, Tex.	4,062
Independent O. & G. Co., Pyote, Tex.	3,684
Total	32,467

Runs to Refineries

Amarillo Prod. Co., Pyote, Tex.	2,351
Blue Bonnett Ref. Co., Wickett, Tex.	2,157
Col-Tex Ref. Co., Colorado, Tex.	6,621
Humble O. & R. Co., McCamey, Tex.	15,562
Midland Ref. Co., Midland, Tex.	790
Tonkawa Ref. Co., Pyote, Tex.	3,990
Valley Ref. Co., Pyote, Tex.	4,156
Big Spring Ref. Co., Big Spring, Tex.	2,011
Total	37,678

Summary

	Previous week	Last period
Pipe line runs	247,125	249,709
Tank car shipments	34,393	32,670
Runs to West Texas ref.	30,672	37,678
Total daily disposition	312,190	321,057
Daily average production	365,296	367,938
Daily average to storage	53,103	46,881

Estimated Daily Average Production WEST TEXAS Week ending February 9

County—	Wells	Prod.
Crane County	274	36,925
Crockett County	44	2,371
Ector County	2	5
Fisher County	7	925
Glasscock County	16	1,033
Howard County	241	40,177
Jones County	71	6,050
Loving County	8	405
Mitchell County	142	2,592
Pecos County	291	82,561
Reagan County	240	18,996
Runnels County	3	140
Scurry County	5	30
Upton County	261	14,024
Ward County	1	95
Winkler County	534	169,021
Total this week	2,140	375,349
Total last week	2,128	373,199
Difference	12	2,150

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended February 9

ANDREWS COUNTY

Company, farm and location—	Remarks—
Deep Rock Oil Co.'s No. 1 Hostetler, 2,310 ft. N and W of SE cor. Sec. 20, Blk. A-46	Hole full water 1,390 ft.; underreaming 10-in. casing; top salt 1,890 ft.; drlg. 2,355 ft.

BORDEN COUNTY

Texas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur.	Location.

BREWSTER COUNTY

E. W. Bateman et al's No. 1 Nevill, 2,000 ft. from S line and 1,000 ft. from W line of Sec. 64, Blk. 13, G.H.& S.A.R.R. Sur.	Drlg. 1,560 ft.
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 4, Blk. G-15, G.C.&S.F.	Drlg. 450 ft.
Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur.	Set 8-in. 1,530 ft.; shut down 2,000 ft.
Forrest Oil Co.'s No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,145 ft.
J. M. Hickey's No. 1 Jackson & Harmon, NE cor. Sec. 182, Blk. 9, G.H.&S.A. Sur.	Shut down 1,150 ft.
Johnson & Weekly's No. 1 Jackson & Harmon, C Sec. 104, Blk. 10, G.H.&S.A. Sur.	Location.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,740 ft.
Williams and others' No. 1 Poncey, 459 ft. S and 1,062 ft. E Sec. 26, Blk. 214, T.&St.L.R.R. Co.	Shut down 515 ft.

COKE COUNTY

Cates & Dennis' No. 1 Mimms, 2,500 ft. S and 330 ft. E of NW cor. Sec. 47, Blk. 4, T.&P. Sur.	Underreaming 1,585 ft.
Cates & Dennis' No. 2 Mimms, 2,340 ft. N and W SE cor. Sec. 8, Blk. W, T.&P. Sur.	Spudded and shut down.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft.	Shut down 2,860 ft.
Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor. Sec. 272, Blk. 1-A, H.&T.C.	Set 8-in. casing 3,033 ft.

CONCHO COUNTY

Duffey & Silk's No. 1 Hill, 150 ft. N and E of SW cor. Sec. 8, Blk. 70, H.&T.C.	Drlg. 1,420 ft.

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WEST TEXAS COMPLETIONS

Coke County

The Louisiana Oil & Refining Co.'s No. 1 Powers, located 745 feet south and 2,310 feet east of the NW cor., Section 157, Block 2, was dry and abandoned at 3,777 feet.

Crockett County

Humble Oil & Refining Co.'s No. 10 Powell flowed 50 bbls. at 2,673-85 feet

(Continued on Page 149)

So long as oil cannot be converted entirely into gasoline, refiners will always have a by-product from their cracking units

But only with the Dubbs Cracking Process can you produce high yields of premium gasoline and have your *choice* of by-products—fuel oil or coke And with fuel oil a drug on the market, Dubbs licensees are producing the highest possible yield of gasoline with only coke as a by-product, which means non-residuum operation

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

New Wilcox Sand Discovery at Allen

Gypsy Gets Big Well in Misener Sand at Maud. Bad Roads and Cold Weather Hamper Field Operations

By J. L. Dwyer

A continuation of the severe weather conditions which have persisted for the past two weeks helped establish sharp drops in the output of the principal pools of Oklahoma. The near zero weather combined with heavy snows delayed the field work, and caused a severe slump in the Greater Seminole and St. Louis output.

The Greater Seminole area due to additional well completions in the west part of the Maud Pool, showed an increase, and on one day last week the area was close to the 300,000-bbl. mark. The return of snappy weather made a rapid change in this situation. The output of the Greater Seminole pools on Monday, February 11, 1929, follows:

Pool—	Wells	Prod.
Little River	323	98,549
Maud	59	46,105
Mission	16	747
Bowlegs	311	39,873
Earlsboro	296	61,811
Seminole	280	37,890
Searight	68	8,885
Total	1,353	293,860

While there was no great change in the pipe line situation in the Oklahoma-Kansas territory, it is confidently expected that the exceptionally poor weather conditions will result in a decrease in crude oil requirements at refineries which will eventually back up on the pipe lines and the producers with the result that the crude market will not be strengthened. The only condition which may offset this factor to some extent is that the anticipation of spring gasoline demands may temper the desire of many refiners to reduce their crude runs materially.

St. Louis Pool

The St. Louis Pool of Pottawatomie County was also affected by the cold weather, and on Monday morning of this week was down to 114,000 bbls. There were no important completions at St. Louis this week, and the slump of some leases coupled with the weather and no new wells resulted in the sharp decline. St. Louis presents a highly concentrated condition so far as the Wilcox sand production is concerned. There are three leases in the pool which are making about one-third of the Wilcox oil. The Independent Oil & Gas Co.'s Youts lease, the Pure Oil Co.'s Thomas lease and T. B. Slick's Hembree lease are jointly making over 30,000 bbls. per day.

There has been some temporary pipe line congestion in the St. Louis Pool, but this condition should be improved this week. The daily average pipe line runs out of the pool for the week ending Saturday, February 9, follows:

Shell	2,904
Oklahoma	11,183
Independent	11,984
Magnolia	27,104
Consolidated	1,695
Prairie Pipe	30,122
Texas	7,319
Gulf	8,929
Sinclair	23,005
Tidal	2,596
Total, barrels	126,841

In the point of field development, there were two outstanding events last week, first the discovery of Wilcox sand production to the east of the Allen Field of Hughes-Pontotoc-Seminole County, and second the drilling in of an exceptionally large well flowing from the Misener sand in the west side of the Maud Pool.

Important Discovery

The Sinclair Oil & Gas Co.'s No. 1 Jefferson "D," SE cor. NE SE Section 23-5-7, found the Wilcox sand at 4,175-83 feet and began flowing 50 bbls. an hour. The first full day's gauge of this well showed 847 bbls., and the 24 hours ending Monday morning, February 11, showed 430 bbls. The latter day's production was decreased through no fault or diminishing rate of flow for the well, but came as a result of the breaking in of some gas which had been encountered in the Cromwell sand at 2,650 feet. It is believed that the well will be good for at least 1,000 bbls. when completed.

This discovery is of much importance, for the new well is 3 miles southwest of the Sinclair Oil & Gas Co.'s No. 2 Amos in Section 7-5-8, which is the Wilcox sand discovery well of this region. There is slight chance of these two regions connecting, for the intervening territory is marked by some Wilcox dry holes, but the spot around the new well has long been considered a favorable "high" with good Wilcox possibilities. The first strike of importance around this well was when the Cal-Cul Oil Co. and the Sun-Ray Oil Co. drilled a gas well to the Cromwell sand at 2,634 feet. The next occurrence of interest was when T. B. Slick, Inc., found some oil in the Wilcox sand immediately south of the Cal-Cul well. While the Slick well was never an especially good producer in the Wilcox, the finding of some oil in that horizon led to the drilling of the Sinclair well. The region around the new well will probably result in the development of a typical Wilcox sand high of limited area.

Gypsy Well Surprise

The performance of the Gypsy Oil Co.'s No. 3 Miller, SE cor. NE SE Section 18-8-5, was surprising, but its decline has already started, and since it is making its oil from the Misener sand, little is expected in the way of sensational oil recovery. The Gypsy well is a nice well, and it started flowing at the rate of 1,000 bbls. This figure is estimated, because the heavy flow of the well was too much for the tankage which had been constructed. The Misener sand in this well was found 4,026-30 feet, and the first day's gauge showed 8,470 bbls. of oil in the tanks. It made 8,367 bbls. for the 24 hours ended Monday morning, February 11.

The Gypsy well is now the best producer in the Maud region, and this is probably caused by the heavy gas pressure which accompanied the oil. There was 37,000,000 feet of gas found right in the top of the sand in this well. Since there have been many instances in this area of big wells being completed in the Misener horizon, and small wells offsetting them, the Gypsy well has created no unusual interest. The immediate east offset, Phillips Petroleum Co.'s No. 1 Miller, Section 17-8-5, produced only 170 bbls. daily in the Misener, while one-quarter mile south of the well the Gypsy's No. 2 Miller was good only for 540 bbls. daily in this sand.

At this time, the Maud region is about the most active part of the Greater Seminole area, and while the erratic nature of the Misener sand and the Hunton lime wells which have thus far been drilled has not lent any special emphasis to the advisability of drilling, there are two spots which seem to have good chances for Wilcox production; one in Section 7-8-5, and the other in Section 18-8-5.

Mission Pool

There is nothing new in the Mission Pool so far as operating conditions are concerned. The wells have shut down on top of the Wilcox sand, and the owners are waiting the decision of the few operators who have thus far declined to join the movement to continue the shut-down in the pool.

The Independent Oil & Gas Co. is completing a good well in No. 3 Harding, SW cor. SE NW Section 18-8-5. The Misener sand was found 4,198-4,222 feet and the well flowed 1,835 bbls. natural.

The territory around T. B. Slick and the Maud Oil & Gas Co.'s No. 2 Davis in Section 18-7-5, is now becoming of interest. The Slick-Maud well had an initial production of 5,500 bbls. daily in the Wilcox sand and soon began cutting 2% per cent. The cut has increased slightly but the offset wells are showing a pronounced high, and may result in carrying this operation some distance to the west. The Slick-Maud discovery well is 1½ miles north of the main body of Wilcox sand production in the St. Louis Pool. There are some wells a slight distance from the Slick-Maud well which were started when the well was drilled in which have been shut down waiting for the close-in wells to be completed.

There is very little change in the Oklahoma City situation. The Indian Territory Illuminating Oil Co.'s No. 1 fee, C SE SE Section 24-11-3w (the discovery well) is still making 5,590 bbls., and the other drilling wells in the pool are a considerable distance above the sand.

Caddo County

Magnolia Petroleum Co.'s No. 2 Cutshall, NE cor. SE SE, Section 5-5-9w, drilled to 2,450 feet, plugged back to 2,430 feet and is pumping 25 bbls.

Carter County

Magnolia Petroleum Co.'s No. 5 Bell, NW cor. SE SW, Section 13-1s-4w, made 84 bbls. from sands at 2,874-2,938 feet.

Cotton County

Razor & Atkins' No. 1 McComb, SW cor. NW NE SW, Section 35-1s-10w, has been abandoned at 2,223 feet. Cullum & Perkins' No. 5 Priddy, SW cor. NE SE NE, Section 3-2s-10w, is dry and abandoned at 2,214 feet.

Grady County

Little Nick Oil Co.'s No. 1 Farwell-Smith, SW cor. NW, Section 24-5-5w, has been abandoned at 2,267 feet. Oklahoma Gas Utilities Corp.'s No. 1 Dryden, C SW SE, Section 35-8-8w, has rigged up to deepen from 1,470 feet. No. 1 Dryden, NE cor. Section 3-4-8w, has been completed for 10,000,000 feet of gas in sands at 2,112-24 feet. No. 2-A Williams, NE cor. SW SW, Section 11-4-8w, was completed for 5 bbls. at 2,007 feet. The Texas Company's No. 5 Glover, NE cor. SE NE SW, Section 13-4-8w, has been abandoned at 2,395 feet. J. B. Nichols' No. 1 Williams, NE cor. SW, Section 26-4-8w, is dry and abandoned at 3,510 feet. Carter Oil Co.'s No. 2 Mar-Horton, NE cor. SW, Section 8-3-5w, made 195 bbls. from sand at 1,833-39 feet.

Hughes County

Yarnell Drilling Co. is erecting the rig for No. 1 Jones, SW cor. NE, Section 15-9-10.

Kiowa County

Joe Ray's No. 1 Level, SE cor. NE, Section 10-6-17w, has been abandoned at 750 feet.

Jefferson County

Beck & Lapham's No. 3 Seay, SE cor. SW, Section 34-6s-5w, is drilling at 20

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

LATTIMER COUNTY

Company, farm and location—	Remarks:
Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18	1,000,000 ft. gas 2,518-20 ft; U.R. csg.

GRANT COUNTY

Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w	Shut down 5,640 ft.
Lario-Lathrop's No. 1 Cornell, NW cor. NW Sec. 24-28-3w	Drlg. 2,655 ft.

HARPER COUNTY

Hoffer Oil Co.'s No. 1 Cooper, NW cor. SE SE Sec. 12-25-22w	Shut down 4,130 ft.

KAY COUNTY

Wentz Oil Corp.'s No. 1-A Ward, C NW SE SW Sec. 32-27-1e	Drlg. 1,470 ft.

WOODWARD COUNTY

Sharon Oil Co.'s No. 1 Elmore, SW cor. SW Sec. 25-21-21w	Rig blown down 3,025 ft.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w	Drlg. 2,150 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w	Shut down 1,910 ft.
Farrond and others' No. 1 Johnson, SW cor. SW Sec. 1-23-17w	Dry and abd. 1,580 ft.
Wilson et als' No. 1 Unknown, NE cor. SW Sec. 4-23-16w	Rig.

GARFIELD COUNTY

E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 4,755 ft.

NOBLE COUNTY

Alco Royalty Co.'s No. 1 Waltermire, SE cor. NW Sec. 33-21-1w	Reaming 2,521 ft.
Marland Oil Co.'s No. 1 Kidd, NW cor. SW Sec. 32-20-1w	Shut down 5,290 ft.; plugging back to show oil 1,836 ft.

KINGFISHER COUNTY

McKinney & Crawford's No. 1 Sturgeon, NE cor. SW Sec. 27-16-6w	Drlg. 4,895 ft.

LOGAN COUNTY

Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w	U.R. 3,970 ft.
J. L. Donahoe's No. 2 fee, SW cor. NW SE Sec. 21-18-2w	Dry and abd. 6,022 ft.

BLAINE COUNTY

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w	Spudded and shut down; renewing leases.
W. J. Donnelly, trustee's, No. 1 Dickens, NE cor. SE Sec. 26-15-12w	Drlg. 4,500 ft.
Ragland and others' No. 1 Unknown, C NW SW Sec. 13-19-10w	Rig.

LINCOLN COUNTY

Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3	Rig.
Morgan & Flynn's No. 1 Finlay, SW cor. SW Sec. 19-16-6	Rig.
Wheeler & Mote's No. 1 Kemmer, NW cor. NE SW Sec. 2-16-5	Drlg. 1,385 ft.

McLAIN COUNTY

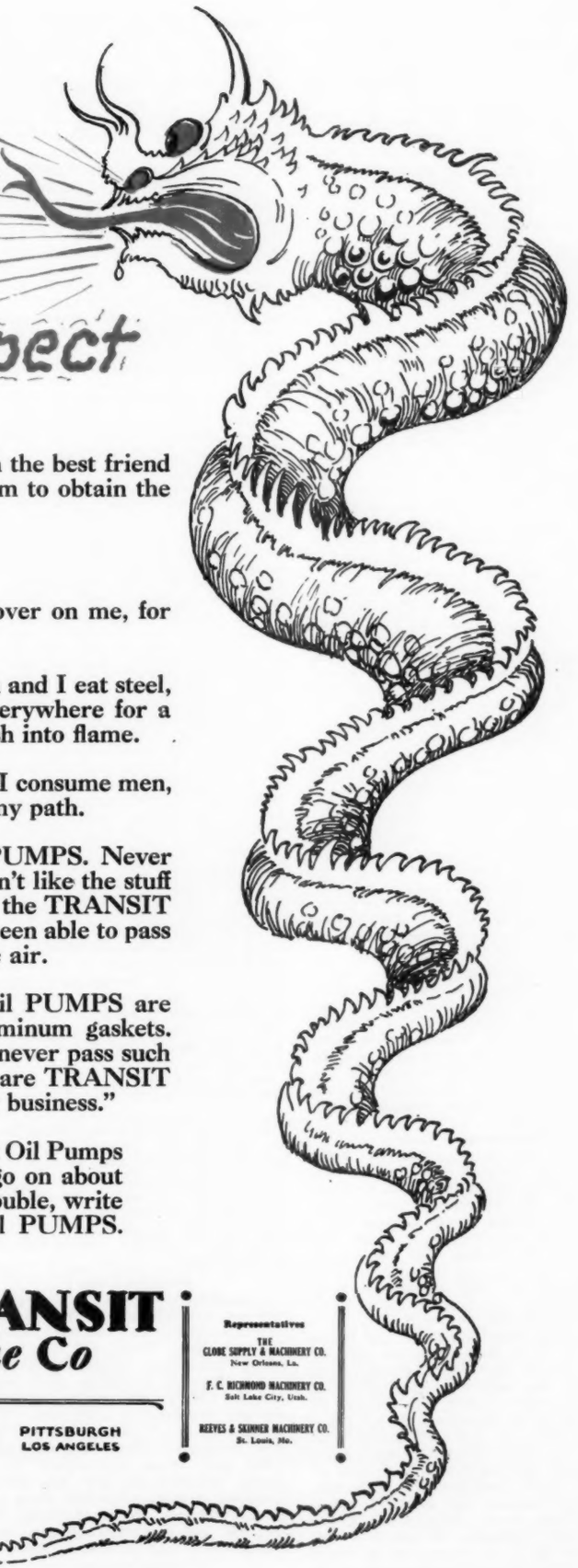
Empire Oil & Ref. Co.'s No. 1 Bonner, SE cor. NW NW Sec. 29-5-3	Drlg. 4,370 ft.

MUSKOGEE COUNTY

Elk Drilling Co.'s No. 1 Jones, SW cor. SW Sec. 34-13-17	Shut down 400 ft.
L. T. Haney's No. 1 Mitchell, SE cor. NW SE Sec. 32-13-18	Drlg. 2,335 ft.
J. L. Slusher's No. 1 Nave, NE cor. SW NW Sec. 20-15-20	Shut down 775 ft.
Colton & Lester's No. 1 Ellington, SW cor. NW SW Sec. 25-12-19	Location.
Colton & Lester's No. 1 Parker, C NW SW Sec. 31-12-19	Spudded.

(Continued on Page 106)

I AM HOT OIL and I demand respect



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"Let no refiner think he can slip anything over on me, for it can't be done.

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"Woe unto the refiner when I get to the air; I consume men, I consume refineries—everything that stands in my path.

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FRICK-REID SUPPLY CORPORATION
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feet. Humble Oil & Refining Co.'s No. 1 Seay, NW cor. NE, Section 3-7s-5w, is pumping 137 bbls. from sands at 1,150-80 feet.

Kay County

Industrial Oil & Gas Co.'s No. 4 School Land, NE cor. SW SW SW, Section 36-28-1w, is drilling at 50 feet, testing for shallow gas. R. A. Gibson's No. 1 Gibson, C N half SW, Section 7-28-1, a shallow gas test, is drilling at 700 feet.

Marshall County

W. W. Fleming and others' No. 1 Null, CSL NE NW, Section 24-5s-5, is drilling at 100 feet. George Bilbo's No. 1 Johnson, NE cor. SE NW, Section 14-5s-5, has been abandoned at 825 feet.

Oklahoma County

Sooner Development Co. made location for No. 1 Capshaw, SE cor. NW, Section 23-11-3w, Oklahoma City Pool. McKeever Drilling Co. and others made location for No. 1 Sampson, NE cor. SW, Section 27-11-3w.

Osage County

Phillips Petroleum Co. is moving a machine in for No. 3, SE cor. SW, Section 21-25-12. A. G. Oliphant's No. 1, NE cor. Section 16-23-9, is spudding. Ray Branstetter has the rig up for No. 2, CEL W half E half SE, Section 22-22-11. Clint Moore Estate and others moved a machine to the location for No. 22, SE cor. SW, Section 9-21-9. A. G. Oliphant has a machine on the location for No. 2, SW cor. SE, Section 9-21-9. H. H. Mundy made location for No. 2, NW cor. SE, Section 4-20-9. Pioneer Petroleum Co. made location for No. 9-B, NW cor. NE SW, Section 5-20-11.

Lewis Production Co. and others' No. 2, NE cor. SE, Section 15-26-6, Burbank Pool, has been completed in Burbank sand at 2,965-3,000 feet making 180 bbls. the first 18 hours. Carter Oil Co.'s No. 2, NW cor. NE SE, Section 33-26-6, made 40 bbls. from sand at 2,865-2,904 feet. Indian Territory Illuminating Oil Co.'s No. 403, SW cor. NW NE, Section 24-26-11, is dry and abandoned at 1,677 feet.

Peters Petroleum Co.'s No. 7, CEL W half NW, Section 26-25-9, is dry and abandoned at 2,270 feet in Bartlesville sand. A. G. Oliphant's No. 1, NE cor. SW SW SW, Section 1-23-9, has been abandoned at 1,540 feet. Clint Moore Estate's No. 1, NW cor. NE, Section 16-21-9, made 225 bbls. from Skinner sand at 2,102-34 feet. The Prairie Oil & Gas Co.'s No. 3, SE cor. NE SW, Section 30-25-8, was completed for 175 bbls. in sand at 2,393-2,403 feet.

Pontotoc County

Yarnell Drilling Co. made location for No. 1 Smith, C S half NW, Section 30-4-6. W. R. Ramsey's No. 4 Whitney, NE cor. SE NW, Section 19-5-8, Allen Pool, made 550 bbls. from sand at 2,565-2,628 feet. Dixie Oil Co.'s No. 1 Herman, NE cor. SE, Section 1-4-7, was completed for a 35-bbl. pumper in sand at 2,004-18 feet.

Pottawatomie County

The Texas Company has the cellar dug for No. 8 Calvin, SW cor. NW SE, Section 7-8-5, Maud Pool. No. 9 Calvin, NW cor. SW SE, Section 7-8-5, is also a cellar. Empire Oil & Refining Co. is moving in tools for No. 1 Smith, SW cor. SE NE, Section 8-8-5. Wilcox Oil & Gas Co. is moving in tools for No. 4 Smith, SE cor. NW SE, Section 8-8-5. Location has been made for No. 5 Smith, NW cor. NE SE, Section 8-8-5.

Amerada Petroleum Corp. and Barnsdall Oil Co.'s No. 3 Wallace, SE cor. SW, Section 17-8-5, is a cellar. Tidal Oil Co. has dug the cellar for No. 2 Everetts, NE cor. SW SW, Section 18-8-5. Amerada Petroleum Corp.'s No. 3 Green, NE cor. NW NW, Section 20-8-5, is a cellar. Gypsy Oil Co.'s No. 3 Le Clair, SE cor. SW SE, Section 23-7-4, St. Louis Pool, is rigging up to deepen from Simpson san dat 4,171 feet to the Wilcox sand. Sinclair Oil & Gas Co.'s No. 6 Blandin, SE cor. NW SW, Section 24-7-4, is rigging up to deepen from 4,256 feet in Simpson sand to the Wilcox sand.

Gypsy Oil Co. has the rig on the ground for No. 3 Roseman, SW cor. NW NE, Section 26-7-4. Shaffer Oil & Refining Co.'s No. 1 Tolon, NE cor. SE SW, Section 30-7-5, is drilling deeper at 4,135 feet. The Prairie Oil & Gas Co. is erecting the rig for No. 8 Campbell, NW cor. SE SW, Section 18-8-5, Maud Pool.

Magnolia Petroleum Co.'s No. 1 Latimer, SE cor. SW NW, Section 17-7-4, swabbed 252 bbls. from Simpson sand at 4,365-4,400 feet. No. 5 S. A. Wilbarn, SE cor. SW SE, Section 24-7-4, St. Louis Pool, was completed for 212 bbls. in Simpson sand at 4,440-51 feet. Sinclair Oil & Gas Co.'s No. 5 Blandin, SW cor. NW SW, Section 24-7-4, flowed 2,130 bbls. from Wilcox sand at 4,309-45 feet.

Pure Oil Co.'s No. 4 Thomas, CSL NE NE, Section 26-7-4, flowed 4,200 bbls. from Wilcox sand at 4,210-46 feet. Sinclair Oil & Gas Co.'s No. 2 Bruno, CSL N half NE, Section 26-7-4, was completed for 1,985 bbls. in Wilcox sand at 4,173-4,209 feet. Magnolia Petroleum Co.'s No. 1 Carroll, SW cor. NW SE Section 1-7-5, is dry and abandoned at 4,905 feet. No. 1 T. Fyke "E," SW cor. NW, Section 28-7-5, made 73 bbls. from 4,395 feet after plugging back from 4,452 feet.

Seminole County

Carter Oil Co. made location for No. 1 Barbee, SW cor. Section 4-8-6, Mission Pool. Location was also made for No. 3 Fuswa, NE cor. NW, Section 18-8-5. Empire Oil & Refining Co. is building the rig for No. 5 Cluck, SE cor. SW NE, Section 11-8-5. The rig is also under construction for No. 6 Cluck, NE cor. NW SE, Section 11-8-5. Twin State Oil Co. has the rig on the ground for No. 2 Ripley, NW cor. SE NE, Section 12-8-5. No. 3 Ripley, NE cor. SE NE, Section 12-8-5, is also a rig on the ground.

Tidal Oil Co. is building the rig for No. 3 Nellie, SE cor. NE SE, Section 12-8-5. Shaffer Oil & Refining Co. moved the rig to the location for No. 2 Weaver, SW cor. NE NE, Section 12-8-5. The cellar is dug for No. 3 Weaver, SE cor. NE NE, Section 12-8-5. Sunray Oil Co. made location for No 3 S. Nitchey, NW cor. SW NE, Section 19-5-8, Maud Pool. The Prairie Oil & Gas Co. has the rig on the ground for No. 6 Baker, NW cor. SE NE, Section 24-9-5, Earlsboro Pool.

Magnolia Petroleum Co.'s No. 1 Varnum, SE cor. SW SE, Section 32-10-6, Searight Pool, made 704 bbls. from Wilcox sand at 4,356-68 feet. W. B. Pine's No. 1 Walker, SW cor. SE, Section 32-8-7, is dry and abandoned at 4,754 feet. The Prairie Oil & Gas Co.'s No. 1 Micco, SE cor. SW SE, Section 5-8-6, Mission Pool, is dry and abandoned at 4,360 feet in Wilcox sand. No. 1 Harjo, SW cor. NE NE, Section 24-9-5, Earlsboro Pool, made 340 bbls. from Wilcox sand at 4,236-38 feet.

Gypsy Oil Co.'s No. 1 Lena, SE cor. NE, Section 10-7-6, Little River Pool, has been abandoned at 4,423 feet. Mid-Continent Petroleum Corp.'s No. 2 Eleck, SE cor. NE SE, Section 23-7-6, which was dry in the Wilcox sand but produced 50,000,000 feet of gas from 1,800 feet and quit, has been abandoned. Sinclair Oil & Gas Co.'s No. 2 Amos "B," SE cor. NE SW, Section 7-5-8, Allen Pool, made 1,850 bbls. from Wilcox sand at 4,158-74 feet.

Stephens County

Lone Eagle Oil Co.'s No. 7 Simpson, NE cor. SW NE SE, Section 34-1s-8w, is drilling deeper at 1,780 feet. Pandem Oil Co.'s No. 1 Green, SW cor. Section 25-2-9w, has been abandoned at 2,547 feet. Magnolia Petroleum Co.'s No. 2 Thomas, CEL SE SE, Section 25-1-9w, is dry and abandoned at 2,880 feet. Fisher & Rankin's No. 1 Kukuk, NE cor. NW SW, Section 14-1s-8w, was abandoned at 2,305 feet. Pace and others' No. 2 Smith, SE cor. SW SW SE, Section 35-1s-8w, is making 120 bbls. from sand at 2,224-28 feet. No. 1 H. Green, NW cor. SW NE, Section 2-2s-8w, is pumping 100 bbls. from sand at 2,172-75 feet.

Creek County

Curtis Oil Co. made location for No. 1 M. Tiger, SE cor. Section 3-17-8. Si-

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DEVELOPMENTS IN WRIGHT POOL CHIEF INTEREST IN KANSAS FIELDS

By J. L. Dwyer

The completion of the Hays & Reynolds well in the Wright Pool of Sedgwick County was the only interesting occurrence in that operation last week. The Hays & Reynolds No. 1 Roll, situated on a five-acre tract in Section 6-26-1e. had sand at 3,374-76 feet and the well filled up with oil. It was drilled to a total depth of 3,393 feet, and the first full 24-hour gauge that the well was on production it made 325 bbls. The last few feet of this well showed almost pure dolomite. The Hays & Reynolds well has been drilled much farther into the pay than most of the wells in the pool. It was taken down 19 feet from the top of the Simpson sand, and the majority of the wells have only been drilled 5 or 6 feet into the pay.

To the east of the pool, the wildcat well of Simmons & Canary is being drilled down in the hope of finding production in the Siliceous lime. This well is No. 1 Hoover, SW cor. SE Section 9-26-1e, and it had a hole full of water in the Simpson sand at 3,455-60 feet.

An interesting development in this area is that the Empire Pipe Line Co. has decided to make its line from the Wright Pool to Eldorado a joint line, which will be used by the White Eagle Oil & Refining Co. the Skelly Oil Co. and the Vickers Petroleum Co. The Empire line is a 12-inch line running from a point near Valley Center to Eldorado. The joint use of this line will eliminate the necessity of additional pipe line construction to the pool for the time being.

The wells in the Wright Pool are still holding their output well. On Monday, February 11, their production was:

Gypsy, Marland & Bu-Vi-Bar:	
No. 1 Wright	1,118
No. 1 Lyons	1,505
No. 2 Lyons	704
No. 1 Lantz	734
Mary Jane Oil Co.:	
No. 1 Fitch	863
Marland Production Co.:	
No. 1 Goodrich	1,410
Aladdin-Slick et al:	
No. 1 Smyser	477
Barnsdall Oil Co.:	
No. 1 Samuels	70

Another Marion County wildcat is a failure: Empire Gas & Fuel Co.'s No. 1 Blankly, NW cor. NE SE Section 30-20-4e, found the chat dry from 2,367-2,418 feet. It was drilled down to the Viola lime which is producing in the Davis Pool along the line between Townships 19-2 and 19-3, and found a hole full of water in that formation from 2,628-2 feet. This failure is located on a block of leases which were taken as a result of a magnetometer survey.

Butler County

Trees Oil Co.'s No. 1 McNally, NW cor. NE NE, Section 11-25-4, has been abandoned at 2,825 feet. O. V. Paul and others' No. 1 Unger, CSL SE SW, Section 31-26-6, is dry and abandoned at 2,804 feet.

Cowley County

Empire Oil & Refining Co. and others No. 1 Feaster, NW cor. NE, Section 36-32-5, is dry and abandoned at 3,546 feet. Kentucky Gas Co.'s No. 1 Sillman, NE cor. SW SW NE, Section 13-34-6, has been completed for 1,500,000 feet of helium gas at 1,112-17 feet.

Ellis County

Marland Oil Co.'s No. 1 Vine, SW cor. SE, Section 27-11-19w, is dry and abandoned at 3,842 feet.

Chautauqua County

The Prairie Oil & Gas Co.'s No. 1 Looby, NE cor. SE NE, Section 17-34-12, made 4 bbls. oil and was abandoned at 1,961 feet.

Elk County

Wahn and others' No. 1 Murphy, NE cor. NW NE, Section 27-31-10, is dry and abandoned at 1,710 feet.

Harvey County

Jolly Ogg Oil Co. made location for No. 1 Schwalter, NE cor. Section 11-24-1w.

Greenwood County

D. H. Morgan and others moved a machine in for No. 1 Hendrickson, CEL SW NW, Section 17-25-9. The Prairie Oil & Gas Co. made location for No. 1 Gaffney, NW cor. SE SE, Section 7-24-11.

Simmons & Rhodes' No. 3 Luthi, NE cor. SW SW, Section 29-22-13, made 175 bbls. from sand at 1,685-1,713 feet. Simmons & Rhodes made location for No. 4 Luthi, NW cor. SE SW, Section 29-22-13. Sheedy and others' No. 9 Green, SE cor. SW NW, Section 11-23-9, is producing 15 bbls. from sandy shale at 2,294-2,376 feet. Syndicate Oil Co. and Phillips Petroleum Co.'s No. 2 Edwards, SW cor.

(Continued on Page 88)

WILDCAT OPERATIONS IN KANSAS

Company, farm and location—	Remarks:
BARBER COUNTY	
Allison & Fitzwilliams' No. 1 Morrisse, C NW SE SE Sec. 9-30-12w	Rig.
Barbara Oil Co.'s No. 1 Blunk, C NE NW Sec. 20-34-13w	2,000,000 ft. gas 4,755 ft.; fishing tools.
Barbara Oil Co.'s No. 1 Lytle, CNL NE NE, Sec. 12-33-13w	Drlg. 2,240 ft.
Rolland et al's No. 1 Pickens, NE cor. NW NE Sec. 27-30-14w	Shut down 4,223 ft.
BARTON COUNTY	
Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w	Shut down 3,948 ft.
Mid-West Exploration Co.'s No. 1 Karst, SW cor. SW Sec. 11-16-15w	Drlg. 3,240 ft.
BUTLER COUNTY	
LaRobb et al's No. 1 Bronsenger, NE cor. SW Sec. 24-27-3	Rig.
Swartz et al's No. 2 Randall, NW cor. NE NW Sec. 22-24-4	Shut down 2,605 ft.
CHASE COUNTY	
Griener & Fowler's No. 1 Carson, NE cor. NE Sec. 9-21-7	Shut down 3,162 ft.
COWLEY COUNTY	
Roth & Faurot's No. 1 Ridding, SE cor. NW Sec. 31-32-6	Drlg. 2,860 ft.
Shell Pet. Corp.'s No. 1 Galley, NE cor. NW SW Sec. 18-35-3	Drlg. 2,420 ft.
Pyle & Sutter's No. 1 Lindstrom, SW cor. NE Sec. 9-35-4	Drlg. 2,670 ft.
Empire-Marland-Twin States' No. 1 Feaster, NW cor. NE Sec. 36-32-5	Pump. 35 bbls. oil and 10 bbls. wtr. daily from 3,165 ft.
Crow & White's No. 1 Powers, C NW NE Sec. 9-32-5	Sand 714-734 ft.; 1,000,000 ft. gas
J. B. Markey's No. 1 Tatum, SE cor. SW Sec. 11-31-6	Shut down 520 ft.
Wakefield & Osborne's No. 1 Osborne, NW cor. NE Sec. 18-30-5	Rig.
ELLIS COUNTY	
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w	Shut down 1,100 ft.
Transcontinental Oil Co.'s No. 1 Boetcher, NW cor. SE SW Sec. 21-13-19w	Drlg. 3,915 ft.
Finney & Weiner's No. 1 Freeman, SE cor. SW Sec. 24-15-20w	Spudded and shut down.
Labette Oil Co.'s No. 1 Urban, NE cor. NW NW Sec. 19-15-16w	H.F.W. 3,618 ft.
Atlantic Oil Prod. Co.-D. B. Mason's No. 1 Gorham estate, C SE SE Sec. 35-15-16w	S.D. 2,462 ft.
Derby Oil Co.-Empire Oil & Ref. Co.'s No. 1 Krause, NW cor. SW SW Sec. 17-14-19w	Cementing core 3,829 ft.
Phillips Pet. Co.'s No. 1 Brull, C NW Sec. 34-14-17w	Drlg. 2,250 ft.
Moncrief et al's No. 1 Johnson, SW cor. NE Sec. 9-13-19w	Rig.

(Continued on Page 105)

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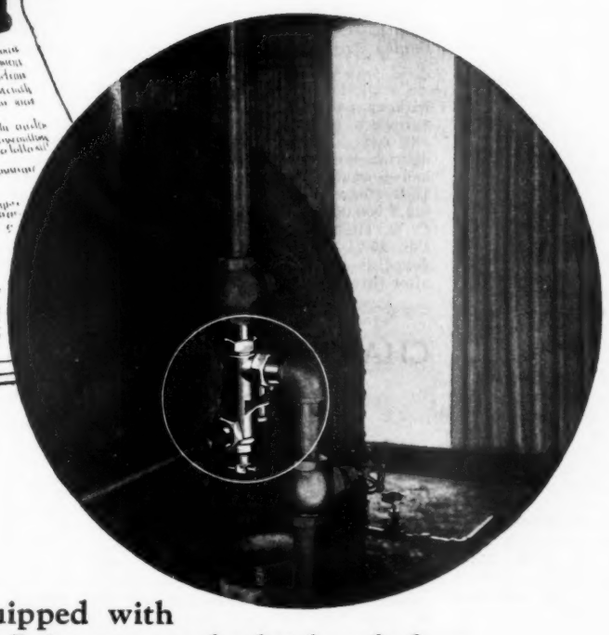

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Drilling Campaign in Monroe District

Plan for Going Back Into Old Smackover Second Sand Wells for Upper Pay Production. Jadwin Flood Survey Ordered

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Feb. 11.—The Richland and Monroe gas fields supplied 1,645,271,000 feet of gas to consumers in three states during the past month for which figures are available—from varying dates in December to corresponding dates in January—according to one of the major companies operating in that territory. This does not take into consideration the additional billions burned in carbon plants. Of the major pipe lines pulling on the fields Magnolia Pipe Line Co. took 237,214,000 feet; Ouachita Natural Gas Co., 795,263,000 feet; Arkansas Natural Gas Corp., 592,793,000 feet; and Industrial Gas Co., 20,001,000 feet. Total consumption for all purposes for the month was estimated at approximately 14,000,000,000 feet. The Memphis Natural Gas Co. line started pulling late in January taking 27,000,000 feet per day for distribution by the Memphis Power & Light Co. in Memphis and by the Mississippi Power & Light Co. in that State and Arkansas Power & Light Co. to a few communities in southeastern Arkansas.

Of more particular interest to landowners, producers and pipe line companies, especially in the Richland district, was the commissioning of Ford, Bacon & Davis for an engineering survey of the Northeast Louisiana gas territory with respect to the application of the Jadwin flood control plan and its effect upon the Richland Field in particular and the entire area in general. The firm was employed by the operators and the Tensas-Boeuf Basin Flood Control Association and while working directly under their direction will co-operate with the army engineers engaged on a similar project.

Drilling Program in Monroe

Meanwhile plans for a drilling campaign of large proportions in the Monroe district progress. Fourteen locations were made the previous week and three more were added this week with prospects for a series of others to follow all divided among the numerous companies and individual producers. While this is going on in Louisiana, there seems to be getting under way a program for going back to old Smackover second sand wells and perforating them for production in the upper pay. Several producers have done this lately and obtained pumpers making anywhere from 25 to 100 bbls. or over, some of them producing pipe line oil while others have developed varying amounts of water. Gulf Refining Co. is bailing No. 9-A Goodwin in Section 5-16-15, to test 36 feet of broken sand at 2,576 feet after deepening from 2,379 feet; No. 2 Gaddy in Section 30-17-14, Union County, filled up 1,900 feet in salt water from 2,604 feet and is drilling at 2,740 feet.

Lion Oil Refining Co. put No. 5 Rowland, Section 15-17-14, Champagnolle, on the air and got 3,000 bbls. of salt water from 2,858 feet. This also was a workover. It had made 2,000 bbls. of water and 100 bbls. of oil from 3,207 feet and perforated casing at 2,845 feet. Magnolia Petroleum Co., deepening No. 2 Gregory, in the same section, tested a show of oil and gas at 2,825-28 feet and set 5½-inch. Originally, the well made 28,000,000 feet of gas total depth 2,822 feet.

LaSalle Parish Blowout

H. L. Hunt's No. 5 Urania, in Section 2-9-1e, Little Creek district of La Salle Parish, staged a gas blowout estimated at 5,000,000 feet at 1,271 feet and after blowing several hours bridged over. Magnolia Petroleum Co.'s No. 2 J. Sartor, in Section 16-16-6, Richland, has passed 2,600 feet without getting a show of gas though it is in the center of the field. Four tests between its present depth and the 2,450-foot pay level elsewhere in the field all were dry.

In Webster Parish, Clark and others have bought the old Robinson and others' No. 1 Mayfield, in Section 20-23-9, Shongaloo, which was a small producer from around 2,700 feet for a short while before salt water took it, and will drill No. 2, same lease and section. Louisiana Oil Refining Corp. is figuring on another deep Trinity test in Section 28-21-10, where Palmer Corp.'s No. 4 Tillman, completed two or three months ago as a big gas well at a rock pressure considerably in excess of that on other deep gassers in Cotton Valley, is maintaining its original volume and pressure.

Completion Record

Completion records for the week were without particular interest there being only two small wells in Champagnolle and some small gassers in the Monroe district. Bossier Parish, Elm Grove, also had a small gasser, Palmer Corp.'s No. 12-B Hodges, in Section 25-16-12, gauging 1,000,000 feet total depth 1,878 feet. C. G. Gibbins' No. 1 Gibbins, in Section 15-21-16, Caddo Parish, was abandoned as a salt water hole at 2,634 feet after three previous tests had been equally fruitless. Simplex Oil Co.'s No. 5 Thomas in Section 15-20-15, Pine Island, shut down at 2,248 feet after a salt water test last August, was abandoned at that depth this week. Randall and others abandoned No. 3 Urania, Section 1-10-1e, LaSalle Parish, (Urania), as a dry hole at 640 feet, failing to find the shallow gas sand that caused a blowout in No. 1 estimated at from 5,000,000 to 10,000,000 feet of gas several months ago. Natural Gas Producing Co.'s No. 22 Crossett, Section 35-21-4, Morehouse Parish, gauged 6,000,000 feet of gas at 965 pounds, total depth 2,203 feet. Louisiana Iron & Supply Co.'s No. 10 Fitzgerald, in Section 8-18-15, El Dorado, was a 10-bbl. pumper at 2,190 feet. In Champagnolle, H. L. Hunt's No. 4 Gregory, Section 10-17-14, came in flowing 100 bbls. through 2½-inch tubing from 3,056 feet, and Pure Oil Co.'s No. 6 W. E. Gregory estate, Section 15-17-14, pumped 95 bbls. from 5 feet of sand, total depth 3,261 feet.

Production Decline

With the 20 producing areas in this division equally divided between increased and decreased production, daily average runs from the field totaling 112,945 bbls. declined 335 bbls. from last week's average. Champagnolle where 103 wells actually producing ran an average of 10,040 bbls., shipped 10,420 bbls. daily, a decrease of 230 bbls. Louisiana runs of 35,715 bbls. were 160 bbls. under last week's and Arkansas' 77,[illegible] bbls. was 175 bbls. less than the week before. Smackover heavy oil runs increased 250 bbls. but the light oil district was off 125 bbls. Daily average runs from the field were:

Louisiana

	Bbls.
Caddo, light	[illegible]
Caddo, heavy	[illegible]
Homer	[illegible]
Haynesville	[illegible]
DeSoto-Red River	[illegible]
Elm Grove	[illegible]
Bellevue	[illegible]
Cotton Valley	[illegible]
Urania	[illegible]
Pleasant Hill	[illegible]
Sarepta-Cartersville	[illegible]
Total	35,71[illegible]

Arkansas

El Dorado	4,6[illegible]
Smackover, light	5,2[illegible]
Smackover, heavy	51,[illegible]
Stephens	1,0[illegible]
Nevada County	1,1[illegible]
Lisbon	1,1[illegible]
Champagnolle	10,4[illegible]
Bradley	[illegible]
Total	77,2[illegible]
Both states	112,9[illegible]
Last week	113,1[illegible]
Decrease	[illegible]

NORTH LOUISIANA

Bossier Parish

Elm Grove—M. Meyer has derrick up for No. 1 fee in Section 31-16-11, location not checked.

Caddo Parish

Greenwood—Lorraine Syndicate's No. 1-D Bryson, Section 18-17-16, cemented 8-inch at 2,735 feet.

Oil City—Simplex Oil Co. cemented 6-inch at 2,143 feet on No. 7 Youree-Randolph, Section 13-20-15.

Pine Island—Dixie Oil Co. is drilling sandy shale at 3,671 feet on No. 1 Dillon, Section 14-21-15, and is shut down at 1,673 feet on No. 5 Hobbs, Section 21-21-15. C. H. French's No. 4 Muslow, Section 31-21-15, is drilling at 250 feet.

Claiborne Parish

Haynesville—Smitherman & McDonald's No. 1 Miller, Section 17-23-8, was dry at 4,338 feet, at 4,376-4,402 feet, and is bailing to test again at 4,[illegible] feet.

LaSalle Parish

Urania—Ayers Brothers' No. 6 Tremont in Section 30-10-2e, is shut down for orders at 1,575 feet. H. L. Hunt's No. 5 Urania, Section 2-9-1e, staged a blowout estimated at 5,000,000 feet of gas at 1,271 feet, bridged and is drilling out bridge.

Monroe District

Morehouse Parish—Amalgamated Carbon Co. cemented 6-inch at 2,133 feet on No. 3 Fairly, Section 53-20-4. Natural Gas Producing Co. set 12-inch at 152 feet on No. 14 Tensas, Section 4-22-4. Southern Carbon Co.'s No. 52 fee, Section 15-20-4, is drilling at 2,088 feet and No. 6 Tensas, Section 2-20-4, at the same depth. Stovall Drilling Co.'s No. 2 Etheridge, Section 22-20-4, is drilling at 1,864 feet.

Ouachita Parish—Hatcher & Evans' No. 8 Hatcher, Section 21-19-4, is drilling at 1,920 feet. LaDel Oil Properties' No. 46 fee, Section 6-19-5, is a derrick. Magnolia Petroleum Co. cemented 8⅝-inch at 2,115 feet on No. 2 Morrison, Section 2-19-4, and is drilling at 1,730 feet on No. 1 United States, Section 15-19-5. Ouachita Natural Gas Co.'s No. 5 Lieber, Section 4-19-4, is drilling at 2,110 feet. Palmer Corp. cemented 6-inch at 2,172 feet on No. 5 fee, Section 24-19-4. Pipes & Mack set 12-inch at 197 feet and are drilling at 500 feet on No. 1 McGee, Section 10-18-4, and set 12-inch at 192 feet, 8-inch at 878 feet and are drilling

(Continued on Page 87)

CHAMPAGNOLLE WILDCAT DISAPPOINTS; MISSISSIPPI PROJECTS UNDER WAY

By D. H. Bancroft

SHREVEPORT, La., Feb. 11.—Test of Joe Hurley's No. 1 Arkansas Timber Co. in Section 29-16-12, Calhoun County, Arkansas, the "Moro Bay well," approximately 4 miles northeast of Champagnolle production, resulted in another disappointment, but the wildcat will probably be drilled to 3,000 feet before abandoned. Six-inch casing had been set at 2,125 feet for some time, but high water in the Ouachita River for the past month or six weeks made it impossible to operate. Location is in the river bottom and the only way to get to it was by boat. At one time the location itself was under water. Plug was drilled Thursday night and after reaming to bottom, total depth 2,314 feet, and washing for three hours, the hole was bailed to within 400 feet of the bottom. Then they ran the bailer to the bottom, but failed to get a show of oil, gas or salt water from the 10 feet of Nacatoch sand. Saturday they were rigging up to run core barrel.

Similar results were obtained in a test of R. L. Gay's No. 1 Sabine Lumber Co. in Section 13-7-14, Sabine Parish, the first test following his completion of No. 1 Bowman-Hicks in Section 14-7-14 as a 50-bbl. producer at 2,130 feet, at which rate it is still flowing. The Sabine Lumber Co. test had 8 feet of limy sand at 2,133 feet total depth and set 8¼-inch at 2,080 feet, bailing dry with no show Friday. Smitherman & McDonald's No. 1 Miller in Section 27-23-8, Haynesville, made another test, at 4,479 feet, which also was a failure; salt water. The well now is figured several feet lower structurally than the first deep test in the field which had gas at around 4,200 feet.

Ouachita County Test

The next test that will attract attention will be that of McDonald Brothers' No. 1 Wilson in Section 25-15-18, Ouachita County, Arkansas, 6 miles west of Smackover production, which is drilling plug from 6⅝-inch cemented at 2,793 feet, total depth 2,818 feet. Six or eight feet of sand developed a considerable show of oil but not so much as in the first hole 50 feet south, which was junked in setting casing after a drill stem test. Bell and others are reported to have had a show of 2,153 feet in No. 1 Terrell, Section 27-18-14, 8 miles south of Champagnolle, but it didn't amount to much, and they are coring at 2,235 feet.

In Louisiana, H. C. Miller of Bernice has blocked approximately 10,000 acres in Township 21, Ranges 2 and 3w, Union Parish, a few miles southeast of Junction City, and is trying to turn 8,000 of it for $2 an acre and a 3,000-foot well to be started before June 1. Triangle Drilling Co. also is picking up acreage in the Sugar Creek district of Claiborne Parish, Townships 20 and 21, Ranges 5 and 6, southeast of Homer. E. R. Ratcliffe and D. M. Lide of Shreveport have taken a one-third interest in Woodley & Collins' Morehouse deep test project which, with dry hole money and proceeds from seven 40's of their block, will finance the well, which is to go 4,000 feet.

MISSISSIPPI

Several more Mississippi projects have got under way during the past week or two. Hightower & Goldstein are reported to have resumed drilling No. 1 Davis in Section 20-13-3, Chickasaw County, last reported in August as shut down at 1,032 feet and Cumberland Oil Co. is reported arranging to start work again on No. 1 Henley in Section 15-21-11, Webster County, shut down at the same time at 1,960 feet. Reeder and others have cemented 8-inch at 2,006 feet in No. 1 State in the SE cor. NW NW Section 25-6-1e, Rankin County.

Atlantic Oil Co. is drilling No. 1 Houston, Section 30-11-6, Sharkey County, at 2,155 feet. It found the Cane River and Wilcox 200 feet higher than O'Brien Brothers got them in their well on the

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Steady Producers in Joe Bruner Field

Seventy-Four Wells in New Shoestring Area Making 18,000 Bbls. Closing Up Gap. Good Wells in Yoast Field

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Feb. 11.—Seventy-four wells in the Joe Bruner (Salt Flats) Field in Caldwell County one day last week gauged a little over 18,000 bbls. This is about the same figure that was recorded a week before. Only a few wells were completed between the reports. Last week the Gulf completed its No. 1 W. O. Allen a little northeast of the main group of wells in the field, in the Edwards and with a record of 1,392 bbls. in 24 hours. This is one of the best wells in the field and helps out the territory to the northeast. The Humble's No. 1 Allen, a couple of locations north of it, was not so good. The Humble's Nos. I and 2 Johnson which gave the field its most important extension are 2 miles to the northeast and a flock of locations have been made between the two points, and a number of completions are due in a few days. Interest in the field at this time centers in closing up the gap between the Humble Oil & Refining Co.'s Nos. 1 and 2 Johnson on the northeast and the producing center on the southwest. It was long since apparent that the field would be a narrow ribbon of derricks, two, three or four wide, and the problem was to find the ribbon. This seems to be gradually working itself out. Drilling up of the 2-mile gap is going to materially increase the production of the field but with no indication of any serious flooding of the market. Production of the pool in two or three months can easily be up around 25,000 bbls. if good producers are found between the production on the southwest and the Humble Oil & Refining Co.'s wells on the northeast. There is also always the possibility that another important extension may be made.

History of the old Luling Field which parallels the Bruner Pool at a distance of about 5 miles to the northwest, seems to be repeating itself in this new Edwards lime pool. The old field was all developing in Caldwell County till the United North & South Oil Co. crossed the San Marcos River and drilled over in Guadalupe County extending the field several miles to the southwest. Gulf Production Co. and Humble Oil & Refining Co. are the most extensive operators in the Joe Bruner Field, Gulf Production Co. at the close of last week having 14 operations listed and 18 producing wells and Humble Oil & Refining Co. having 19 operations listed and 12 producing wells. Shell had 11 producing wells and quite a bunch of tests listed.

Gauge on Bruner Field

A gauge of the production of the field for one day of 24 hours last week shows the following:

Company, lease—	No. wells	Bbls. dly. prod.
Abercrombie:		
Moses	5	1,207
Atlantic:		
Davis	1	70
Cranfill & Reynolds:		
Merriweather	1	61
S. Smith	3	1,517
Golden West:		
Wilson	5	639
Gulf Production:		
Conley	7	2,362
Davis	3	660
Jim Smith	1	67
W. L. Smith	7	1,860
Humble Oil & Refining Co.:		
J. J. Davis	3	783
W. F. Davis	1	89
T. B. Johnson	1	128
William Smith	3	1,087
J. B. Tiller	4	1,051
Lotan Oil, Inc.:		
W. F. Davis	4	55
Wilson	2	233
Shell Petroleum:		
Malone	3	287
Moses	2	974
William Smith	5	2,360
Floyd Tiller	1	318
Sun Oil Co.:		
Malone	3	1,052
Carl Bros.:		
Malone	1	95
The Texas Company:		
Merriweather	3	561
Lee Moses	1	14
Turman & Brown:		
City of Luling	1	146
Towns & Porter:		
Hickman	3	750
Total	74	18,599

On the day the field was gauged two wells were off production for the full day.

Laredo District

Several important things happened in the Laredo district the past week. Shankle on the southeast side of the Carolina-Texas Pool in Webb County, who last week had a showing of oil, did not get enough to make a well and is drilling past the 2,600-foot horizon where the Usher Carson well is producing. But Foster-Barnsley, a little southwest of the Carson well in their No. 1 Webster in sand at 2,619-21 feet, made a 60-bbl. well of 36 gravity oil. The depth is very nearly the same as in the Carson well. The Shankle well is southeast of the Carson well. All are in Survey 684. The Texas Company has made a location for its No. 1 Benavides, 150 feet from the north and west lines of the southeast quarter of Survey 683, which is approximately 1 mile due west of the Foster-Barnsley and Carson wells on the Webster land in Survey 684. The Texas Company is moving in a rig. The well is a half mile from nearest production on the north.

Bruniville Area

Just south of the village of Bruniville in Webb County where O. W. Killam more than a year ago brought in a gas well at around 2,300 feet in virgin territory, he has drilled his No. 5 Bruni in Section 26 of Survey 8 of the Arispe grant and at 2,317 feet is in a sand that shows oil. Casing has been set at 2,317 feet. The Cole gas pool producing at around 1,700-1,800 feet is a little east of it and the Magnolia-Cole oil pool is northwest of it. A number of gas wells are spotted over the territory 2 miles west of the old Cole gas field in this 2,300-foot sand. Frequency with which oil showings are had in connection with gas in the Laredo territory makes this less important than in some centers but it makes the test worth watching.

In the Randado Pool in Jim Hogg County the Magnolia Petroleum Co.'s No. 41 Merchant State Bank had a sand at 3,155-60 feet that showed a small amount of gas through an Edwards tester. The well is now drilling at 3,290 feet. The producing horizon in that field is around 1,300 feet and this showing of gas at 3,155-60 feet is something new.

Randado Oil Corp. has completed its Nos. 29 and 30 Palacious in the Randado Field, the first at 1,276 feet for 30 bbls. and the other at 1,291 feet for 45 bbls.

In the Albercas Pool chief interest centers around the Edward St. Albans' No. 4 Holbien at the south end of the field which is losing returns since 1,620 feet and now drilling at 1,770 feet and with about 600 feet more to make before reaching production depth.

Refugio Field

In the Refugio Field the two wells at the north end of the field that have been watched for the last several weeks are not yet completed. Union Exploration Co.'s No. 1 Holmes Heard and Union Exploration Co. and William F. Morgan's No. 2 Adkins are still working to correct mechanical troubles.

COMPLETIONS

Bastrop County

Sun Oil Co.'s No. 1 A. M. Yoast, A. Garcia Survey, plugged back second time to 1,568 feet, made 80 bbls.

Atlantic Oil Producing Co.'s No. 3 A. M. Yoast, A. Garcia Survey, completed at 1,385 feet estimated at 1,000 bbls.

Atlantic Oil Producing Co.'s No. 2 A. M. Yoast, same survey, brought in at 1,467 feet making an estimated 1,000 bbls. daily initial.

Caldwell County

Cranfill & Reynolds' No. 1 S. Smith, A. Floyd Survey, completed at 2,706 feet in the Bruner Field making 630 bbls. first 24 hours.

Sun Oil Co.'s No. 4 Malone, same survey, completed at 2,714 feet making 400 bbls. daily on the pump.

Shell Petroleum Corp.'s No. 2 William Moses, 300 feet north of No. 1, has been completed at 2,704 feet making 350 bbls.

Humble Oil & Refining Co.'s No. 3 J. J. Davis, A. Floyd Survey, completed at 2,718 feet making 175 bbls.

Humble Oil & Refining Co.'s No. 4 William Smith, same survey, completed at 2,687 feet making around 400 bbls. daily.

Humble Oil & Refining Co.'s No. 4 J. B. Tiller, completed at 2,720 feet making 175 bbls. on the pump.

Gulf Production Co.'s No. 1 W. O. Allen, Gerren Hinds Survey, completed at 2,699 feet making 1,392 bbls. first 24 hours.

Webb County

Foster-Barnsley's No. 5 (1) Webster, NE SW, Survey 684, in Carolina-Texas Field, has been completed at 2,622 feet making 60 bbls. of 36 gravity oil.

Jim Hogg County

Randado Oil Corp.'s No. 30 Palacious, Survey 291, Block 3, Randado Field, has been completed at 1,291 feet for 45 bbls.

Randado Oil Corp.'s No. 29 Palacious, Survey 291, Block 14, same field, completed at 1,276 feet making 30 bbls.

Zapata County

South Texas Production Co.'s No. 3 Jennings, Cerrito Blanco grant, Jennings Field, completed at 1,968 feet making 10,000,000 feet of gas daily.

ABANDONED TESTS

Bastrop County

Cranfill & Reynolds' No. 6 A. M. Yoast, A. Garcia Survey, at 2,080 feet has been abandoned in chalk topped at 2,066 feet.

Cranfill & Reynolds' No. 1 Stork, H. Stewart Survey, at 1,790 feet is dry and abandoned with Edwards topped at 1,740 feet containing water.

Caldwell County

John V. Edwards' No. 1 W. C. Caldwell, Cornelius Crenshaw Survey, at 1,700 feet is abandoned, rig still standing.

Bartlett Brothers' No. 2 G. N. Martindale, W. G. Steffey Survey, at 1,622 feet is dry and abandoned.

Fred Adams' No. 1 Burney, Gideon Pace Survey, at 2,802 feet is dry and abandoned.

Jim Hogg County

Brooklyn Oil Co.'s No. 2 Garza, Survey 40, Block 16, Alworth Field, at 1,-

(Continued on Page 124)

LONG NEGLECTED AREA SCENE OF LIVELY CAMPAIGN OF LEASING

By B. D. Stevenson

SAN ANTONIO, Tex., Feb. 11.—The activity in leasing through Wilson, Gonzales, Fayette and adjoining counties on the south of these, which has been referred to in The Oil and Gas Journal several times is the most important feature of wildcatting in Southwest Texas at this time. Leases can be had at $1 and $2 an acre and big tracts are being blocked. Some wildcatters looking ahead did considerable blocking in this territory a year or so ago in the belief that it would be the next area to be tested. Now every big company operating in Southwest Texas is in the field doing geological work and taking leases. There is somewhat of a scramble on for leases. Some of the companies have put extra geologists and men in the field. There is talk that this is an extension of the Reynosa Escarpment conditions. The Reynosa Escarpment starts on the Rio Grande in the southeastern part of Starr County, extending north through Zapata, Webb, Duval, McMullen, Live Oak and Karnes Counties. As traced in University of Texas Bulletin No. 2,645 the Reynosa Escarpment stops in Karnes and the activity in taking leases is to the north of this line.

The Bruner Field in Caldwell and the Sun Oil Co.'s Gay Hill Field at Independence and the Humble's field at Raccoon Bend undoubtedly have considerable to do with the leasing activity whether they will ultimately be shown to connect geologically or not.

Prices are still low but in three months or so prices will be materially higher and several months later there will probably be some wildcat tests started. Strange to say this territory is probably the least worked over by geologists of any in Southwest Texas. Till recently it was not a popular territory with the major companies and independent companies and wildcat operators who watch the thermometer of major company activity avoided it since it was hard to sell acreage around a test in that territory and difficult to finance a test except possibly with outside investors. Geology of the Balcones Fault zone has been studied quite thoroughly and the Reynosa Escarpment also has been studied. The Reynosa was mapped carefully by University of Texas Bulletin No. 2,645 but the mapping stops on the county line between Gonzales County on the northwest and DeWitt and Lavaca on the southeast. The new leasing campaign is to the north of this and between it and the Balcones Fault.

Activity is extending to some extent to the southeast also into Goliad, Victoria and Jackson Counties. There is a keen leasing campaign in northern Victoria where the Humble has a big block and is starting the fourteenth shallow test. Houston Oil Co. paid $17.50 an acre for a 169-acre lease in that territory which is near Nursery. Humble's shallow tests have nearly all found gas and a deep test to prove the structure thus worked out is the logical step soon.

Wildcat Tests

Of wildcat operations the J. J. Christie's No. 1 Taylor Thomas which had a showing of oil at 1,053 feet in the Austin chalk which it topped at 907 feet has started to drill deeper. Last week it bailed to the bottom and got a bucket or more of oil. It had only a few inches of porous formation where it made the test and is in hard formation again and expecting to pick up production at another 50 feet at the contact of the Austin and Eagleford.

Two miles north of the Refugio Field

(Continued on Page 122)

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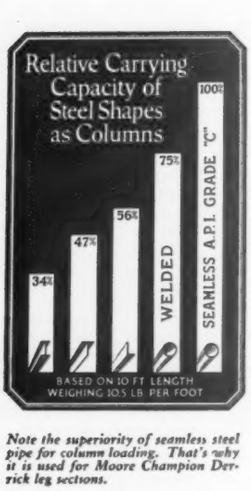

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New Pure Oil Co. Well Flows at Rate of 380 Bbls. Initially, 6 Per Cent Mud and Water. Found Sand Higher

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Feb. 11.—Indications that additional prolific production will be added to the Sweet Lake Field of Cameron Parish, Louisiana, by Pure Oil Co.'s No. 7 Yount Lee Oil Co. were given in reports from the field over the week end. That it might prove the biggest producer so far completed in the field was the belief of operators despite the fact that it never has been wise to predict on Gulf Coast salt dome wells.

This well, which came in earlier in the week, was being worked over Monday after sanding up. It flowed initially at the rate of 380 bbls., 6 per cent mud and water, but produced only a few days. As soon as cleaned out and as soon as a new screen setting is made the well is expected to exceed this production many times.

The well is of particular interest in view of the fact it found the sand considerably higher up than previous wells, all of which have produced only below 5,600 feet. No. 7 Yount Lee was brought in at a total depth of 4,594 feet, a more reasonable depth considering the wildcatting development of the field.

Sweet Lake, which was opened for production in October, 1926, by a well from a sand at 5,897 feet, has been known as a field of deep holes. The discovery well, while producing was the deepest producer in the Gulf Coast. Since, another well has been completed there at 5,924 feet. A shallower sand at 5,658 feet has been productive in another well, the latter being the most prolific and consistent producer of any of the three completed before the latest well.

Gravity of the oil in No. 7 is 29.3 degrees at a temperature of 70 degrees. An estimated 1,500,000 feet of gas accompanied the oil production.

Boling Dome Wildcats

Other completions in the Gulf Coast territory during the week were of minor importance and as the week closed the chief interest was in a half dozen or more tests either testing or waiting with casing cemented on sands.

Attempts Saturday were being made to complete two wildcats on the northeast flank of the Boling Dome, these being Gulf Production Co.'s No. 5 Bay and South Texas Petroleum Co.'s No. 1 Fotjeck-Hyde. The former was swabbing some fluid from a sand at 4,060-66 feet. It was estimated 10 per cent of the fluid was oil. Late in the day the South Texas Petroleum Co.'s test had failed to flow after swabbing although it tried to make several small heads. It is at a total depth of 3,925 feet, testing sand at 3,743-3,869 feet.

At Raccoon Bend, Humble Oil & Refining Co. and Valley Oil Corp. were expecting a fair well in their No. 2 Hardy which was waiting on cement to set to test a sand at 3,256 feet which had showed considerable oil in a drill stem test with a testing tool.

Three deep tests were standing in oil showing sands at Nash Dome, one of which is a wildcat 800 feet south of production on the south flank. Casing plug had been drilled Saturday in one, but the sand probably will not be tested until late Monday or Tuesday.

Barbers Hill Watched

Coastal operators continue to watch Barbers Hill's latest completion, Yount Lee Oil Co.'s No. 1 Chambers, which has been making the possibilities of a good field on the southwest flank of the dome extremely more favorable by a consistent production record. Although originally completed as making only an estimated 2,200 bbls. daily, production since has increased to better than 4,700 bbls. daily and is holding up.

Gulf Production Co. extended production of the east side of the Pierce Junction Dome a short distance in its No. 7 Cain, which came in Friday flowing an estimated 500 bbls. daily from sand at approximately 4,565 feet. At Spindletop, Yount Lee Oil Co. added another fair well to its string of producers in No. 89 McFaddin, completed for 1,000 bbls. initially at 3,900 feet.

Four more wells were completed in the recently opened shallow sand area on the South Liberty Dome, these being Gulf Production Co.'s No. 5 McLean, pumping 50 bbls., 843 feet; this company's No. 7 McLean, flowing 250 bbls., 1,049 feet, No. 8 McLean, flowing 700 bbls. at 840 feet, and Sun Oil Co.'s No. 31 Mitchell, pumping 70 bbls. at 957 feet. The latter company completed No. 26 Mitchell in the deep sand at the north end of the east flank production flowing 500 bbls. at 3,504 feet.

Other Completions

Other completions were: Golding and associates' No. 1 Overly, Blue Ridge, a workover, pumping 200 bbls. daily, 2,254 feet; East Batson Oil Co.'s No. 17 Stateland, Batson, pumping 5 bbls. net oil, 1,012 feet; B. O. Poole's No. 1 Paraffine, Batson, pumping 10 bbls. net oil, 489 feet; Elberts and associates' No. 4 Herbert, Sour Lake, pumping 55 bbls. net oil, 1,884 feet; Gulf Production Co.'s No. 13 Paddoc-Smith, Goose Creek, flowing 300 bbls. oil, 3,644 feet; Republic Production Co.'s No. 53 Dolbear, Hull, pumping 25 bbls. net oil, 2,499 feet; Brownie-Babbette Oil Co.'s No. 5 McLean, Orange, pumping 6 bbls. net, 3,089 feet; Continental Oil Co.'s No. 14 Chesson, Orange, pumping 40 bbls. net, 3,019 feet; Gulf Refining Co.'s No. 6 Lutcher-Moore, Starks, pumping 80 bbls. net, 4,474 feet.

Daily Average Production

Daily average production of coastal fields during the week increased 2,874 bbls., this being due entirely to Barbers Hill, where increase was made from 2,920 to 6,525 bbls. Other fields continued fairly steady with minor changes in a few. A slight gain also was reflected in Southwest Texas fields but this was nominal. Figures for the week ending February 9 for both districts are:

GULF COAST

Texas	
Allen Dome	4
Barbers Hill	6,525
Batson	1,371
Big Creek	5,215
Blue Ridge	4,138
Brenham	150
Boling	2,057
Damon Mound	850
DeWalt	7,662
Fannette	930
Gay Hill	500
Goose Creek	6,530
High Island	1,107
Hull	10,213
Humble	4,959
Jasper	10
Markham	446
Nash Dome	620
North Dayton	490
Orange	3,183
Orchard	74
Pierce Junction	11,804
Raccoon Bend	2,033
Saratoga	965
Sour Lake	2,936
South Liberty-South Dayton	6,727
Spindletop	33,163
West Columbia	7,114
Total	121,576
Total last week	118,513
Increase	3,063

South Louis'ana	
Anse La Butte	41
Bayou Bouillon	357
Edgerly	818
Evangeline	822
Hackberry	5,796
Lockport	4,367
Sorrento	699
Starks	718
Sulphur	2,450
Sweet Lake	830
Vinton	4,145
Welsh	30
Total	21,073
Total last week	21,262
Decrease	189
Total Gulf Coast	142,649
Total last week	139,775
Increase	2,874

Southwest Texas	
Dale	565
Gonzales	50
Kingsville	298
Luling*	32,184
Lytton Springs	1,097
Refugio	1,205
Somerset	1,903
Mirando	12,885
Medina County	30
McMullen County	45
Total	50,262
Total last week	50,037
Increase	225

*Includes: Bruner, 17,678 bbls.; Caldwell County, 7,652 bbls.; Guadalupe County, 4,692 bbls.; Larremore, 255 bbls.; Yoast, 1,907 bbls.

Humble—Harris County

South Texas Petroleum Co.'s No. 3 Morris on the south edge of the Humble Field, is drilling sticky shale at 2,840 feet. The Texas Company's No. 1 Pleasants, a north offset to the Morris tract, is rigged up. On the north side, The Texas Company's No. 22 House is drilling sand and shale at 4,203 feet. The latter's No. 14 Koehler is drilling shale at 2,835 feet.

DeWalt—Fort Bend County

Humble Oil & Refining Co.'s No. 1 Nelson, which came in two weeks ago blowing gas with a light spray of oil from sand at 3,442 feet, probably will be deepened. No. 2 Camp is drilling hard sand at 2,296 feet. No. 2 Deatherage has drilled to a total depth of 3,658 feet and the hole is being reamed to 12¼-inch preparatory to deepening. No. 5 Sugarland is drilling gumbo at 710 feet. Nos. 2 and 3 Brazos Farms are rigged up ready to drill while No. 4 Brazos Farms is standing as a derrick. Gulf Production Co.'s No. 1 Deatherage and No. 1 Sugarland are standing as locations.

Raccoon Bend—Austin County

The next well expected in at Raccoon Bend is Humble Oil & Refining Co. and Valley Oil Corp.'s No. 2 Hardy, which late in the week was waiting cement to set to test at 3,256 feet. In a drill stem test it filled 20 fourbles with oil in 10 minutes. No. 2 Walton is drilling sandy shale at 3,003 feet, and No. 1-C Grawunder in shale at 3,325 feet. No. 2 Urban is down 1,120 feet but is losing returns. No. 1 J. W. Wilson is drilling shale and lime at 833 feet. No. 1 Sherrill is drilling shale at 380 feet. No. 2 E. Kearns is drilling lime and shale at 858 feet, and No. 1 E. Ueckert is in sand and hard shale at 710 feet. No. 3 E. B. Wilson, No. 2 Dieutrichs, No. 3 Roy Thompson are rigged up and No. 2 Saunders is standing a derrick.

Barbers Hill—Chambers County

Humphreys Corp.'s No. 6-B Kirby is drilling shale at 5,722 feet. This company's No. 1 Cornelia Barber is in a sandy shale at 4,996 feet and has set 7-inch casing at 4,949 feet to test. Bennett Petroleum Co.'s No. 2 Kirby is drilling sandy shale at 5,572 feet, and its No. 1 Means is in sand and lime at 3,126 feet. Joe Bashara's No. 1 Tarbutton is drilling sandy shale at 4,740 feet. Rexall Petroleum Co.'s No. 1 Shaw is drilling gumbo at 1,835 feet. The latter is 375 feet southeast of Bennett Petroleum Co.'s No. 1 Smith, which opened deep production on the southeast flank of the dome.

Bennett Petroleum Co. also has made location on the north side of the field for No. 1 Barber and has a derrick up.

On the southwest flank, Yount Lee Oil Co.'s No. 2 Chambers is drilling gumbo at 1,200 feet. This company's No. 3 Richardson is drilling shale at 1,975 feet. Gulf Production Co. is rigging up for No. 1 fee, offset to Yount Lee Oil Co.'s Chambers tract.

Boling—Wharton and Fort Bend

South Texas Petroleum Co.'s No. 1 Fotjek-Hyde, on the northeast flank, Saturday was swabbing at 3,925 feet, to test sand at 3,743-3,869 feet. It tried to make several small heads but so far it is not producing. Gulf Production Co.'s No. 5 Bay in the same district also was swabbing from an oil sand at 4,060-66 feet. It was reported Saturday as making some fluid of which a small amount was oil. Scott & Peck's No. 1 Armstrong is drilling sand rock at 3,860 feet. The Texas Company's No. 1-A Dipple is drilling hard sand at 3,349 feet. No. 1-B Dipple is drilling gumbo at 1,803 feet. No. 1 Pleasant is standing rigged as is No. 2 E. C. Farmer on the southeast flank. Sun Oil Co.'s No. 4 E. C. Farmer on the southeast flank is in a sand and shale showing oil and gas at 3,756-3,866 feet and will test. Sun's No. 2 Rogers is drilling sand rock at 3,263 feet.

On the south side of the dome, Vacuum Oil Co.'s No. 1 Taylor plugged to 2,946 feet to test sand at 2,920-40 feet, had set screen late in the week. No. 2 Taylor is reaming at 3,323 feet.

Pierce Junction—Harris County

Navarro Oil Co.'s No. 3-A Cain on the east side of the dome has drilled into sticky, heaving shale at 6,030 feet, but before being abandoned an attempt will be made to test several sands passed up in going to this depth. This is one of the deepest holes ever drilled at Pierce Junction. Navarro Oil Co. and Texas Exploration Co.'s No. 14 Dooley is drilling hard sand at 2,064 feet. These operators also are rigging up to deepen their joint No. 4 Dooley. Navarro Oil Co. and Humble Oil & Refining Co.'s joint No. 2 Dooley also is being rigged up to deepen. Gulf Production Co.'s No. 27 Taylor is coring deeper in hard shale at 3,759 feet after testing salt water at 3,749 feet. Gulf Production Co.'s No. 2 Fitzsimmons-Hamman is in oil showing sand at 4,538 feet and will set casing to test.

On the west flank, Rio Bravo Oil Co. has abandoned its No. 6-A Settegast after testing dry at 3,977 feet to which depth it was plugged from 4,640 feet. This company's No. 9-A Settegast is in an oil sand at 4,510 feet and has set casing to test. No. 13-A Settegast, a wildcat, is drilling lime at 3,056 feet. The latter's offset, Reece Wolfe's No. 1 Herman estate, is standing as a derrick. Moody Corp.'s No. 4-B Settegast, southwest flank wildcat, is drilling gummy shale at 4,090 feet. Anderson & Plummer's No. 2 Whitehead, north flank, is drilling at 5,356 feet. On the northeast, T. G. Shaw-Texas Exploration Co.'s No. 2 Bannon is being rigged up. This company's No. 2-D Fitzsimmons, 300 feet south of No. 2 Bannon, is drilling sidetracked hole in lime at 2,792 feet.

Goose Creek—Harris County

Following the abandonment of No. 74 Simms-Smith, Humble Oil Co. has rigged up for No. 75. The latter is 4,200 feet southwest of No. 74, which was a wildcat northeast of the field. Atlantic Oil Producing Co.'s No. 20 Gaillard is drilling at 2,487 feet. Gulf Production Co.'s No. 8 Gaillard fee is drilling at 1,872 feet. Russell Farrell's No. 5 Gillette has been rigged up to deepen.

Blue Ridge—Fort Bend County

Sheffield, Telshaw & Cady's No. 2 Blakely, north side of the field, has picked up a sand at 2,740 feet and has

(Continued on Page 121)

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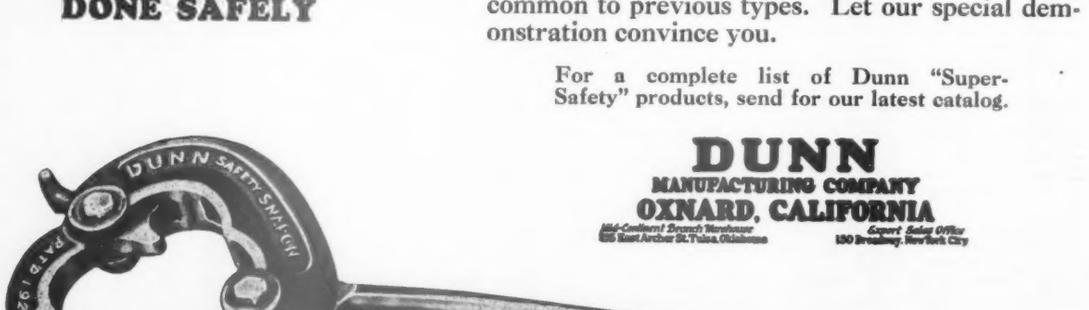

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Storm Hinders Rocky Mountain Work

New Mexico Least Hit. Skelly Well, Jal District, Lea County, Flowed 30 Bbls. an Hour by Heads Before Shut In for Storage

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Feb. 9.—Subzero weather and snow storms in many parts of Colorado, Wyoming and Utah handicapped drilling operations again this week. New Mexico, apparently, was not as severely hit as other areas. In southeastern New Mexico, the Skelly Oil Co.'s No. 1 Joyner, in Lea County, flowed 30 bbls. per hour before being shut in for storage. The Marland Production Co.'s No. 1 Lockhart continued to spray 15 to 20 bbls. of oil with 1,000,000 feet of gas, and its No. 1 Lynn gauged 50,000,000 feet of gas at 3,779 feet. Flynn, Welch & Yates' No. 1 Jackson, in Eddy County, gauged 150 bbls. and has been connected with the pipe line to Artesia. In the northwestern area the Angel Peak Oil Co.'s No. 1 Garland, in San Juan County, had 1,616,000 feet of gas in the Picture Cliff at 1,850 feet. The Marland company was the only bidder for an exploratory lease on the Chimney Rock structure in the Navajo Indian Reservation.

In Colorado, the Continental Oil Co. had one failure in the Florence-Canon City district, and the North Park Oil Co. abandoned its No. 1 Goettler, in Jackson County, at 900 feet. Several wells are scheduled for drilling in the new Vineland district southeast of Pueblo, where the Rozella Oil Co.'s No. 1 is still standing with oil in the hole, but which has not been tested. A shallow test in the city limits of Grand Junction, and another in the Denver Basin, in Elbert County, commenced spudding.

The Utah Southern Oil Co. completed its No. 3 on the Garland Dome, Big Horn County, Wyoming, as a 15,000,000-foot gas well, and two small wells were completed in the Osage Field in Weston County. Several Oregon Basin tests are at interesting stages, and a contract for some production from that field reported this week indicates a more favorable market for the oil.

NEW MEXICO

Few changes in the status of the wells in southeastern New Mexico was reported this week. The Skelly Oil Co.'s No. 1 Joyner, NE cor. SE, Section 26-25-36, on the west side of the Jal district, north of Winkler County, Texas, continued to attract the most attention. It has not been deepened below the depth of 3,331 feet reported last week. When drilling deeper from 3,302 feet, where it was making oil with some gas, the quantity of gas increased at 3,318-25 feet and more oil was encountered at 3,325-31 feet. The well flowed by heads, making 30 bbls. per hour when it was shut in to construct storage. The Texas & Pacific Coal & Oil Co.'s No. 1 State, SE cor. SW, Section 22-23-36, north of the Jal district and near the western boundary of Texas, topped the salt at 1,570 feet and is drilling at 1,682 feet in anhydrite. Surface elevation is 3,407 feet. It appears to be running fairly high and will be closely observed from this time on. The Empire Gas & Fuel Co.'s No. 1-C State, SW cor., Section 12-21-34, also is reaching an interesting depth. It is drilling at 3,780 feet in anhydrite and sand. It topped the lime at 3,575 feet, which indicates that it is running about 141 feet higher than its No. 1 State, NE NW, Section 8-21-35. The Maljamar Oil & Gas Co.'s No. 2 Pearsall, C NE NE, Section 33-17-32, in the Caprock area, is drilling at 4,223 feet in lime and has 3,000 feet of oil in the hole. At 4,157 feet it had a show of salt water.

The Midwest Refining Co.'s No. 13 Farnsworth, NE NE, Section 13-26-36, on the east side of the Jal district, is bottomed at 1,314 feet and showing some water. The 10-inch is being cemented at that depth. Same company's No. 19 Farnsworth, SW SW, Section 12-26-37, is bottomed at 3,877 feet and still drilling by tools. It will be shot again to loosen up the bit. The Marland Production Co.'s No. 1 Lockhart, NE NW NW, Section 31-21-36, in the Eunice district, is still shut down for orders. It is bottomed at 3,805 feet and the bailer has been recovered. It is making 1,000,000 feet of gas and spraying some oil, estimated at 15 to 20 bbls. per day. Cranfill & Reynolds' No. 1 Wilson, NW NE, Section 23-25-36, is rigged and ready to commence spudding. The Vacuum Oil Co.'s No. 1 State, CWL, Section 13-17-34, is drilling water well and moving material to location. The Texas Production Co.'s No. 1 Moberly, NW SE, Section 17-26-37, is reported in lime below 3,400 feet, and its No. 1 Shepherd, SE NE, Section 6-26-37, is still bottomed at 3,223 feet and fishing for tools. At this depth it was making 4,000,000 feet of gas and 50 to 75 bbls. of oil when the tools were blown up the hole. The Gypsy Oil Co.'s No. 1 Mattern, SW SE, Section 24-21-36, is drilling below 300 feet. Marland's No. 1 Lynn, NW cor. SE, Section 26-23-36, is drilling at 3,857 feet in brown sandy lime with a show of gas. At 3,779 feet, the hole was bailed and tested and made 50,000,000 feet of gas, estimated. The gas was then killed and drilling resumed. Same company's No. 1 Warren, SW SW, Section 28-20-38, is coring at 3,099 feet in anhydrite. There was a little gas at 2,940 feet. Marland's No. 1 Reed, NE SW, Section 22-20-36, is bottomed at 3,055 feet in anhydrite, and its No. 1 Meyer, SW NW, Section 26-20-37, is drilling at 3,545 feet in lime. It showed more gas at 3,595, 3,600 and 3,615 feet.

Eddy County

In Eddy County, Flynn, Welch & Yates' No. 1 Jackson, C NE, Section 13-17-30, northeast of the Artesia Pool, gauged 150 bbls. on January 31, and is now connected with the pipe line to Artesia. Total depth is 3,451 feet. Some acreage has been changing hands in the vicinity of this well and prices for royalties and leases have mounted steadily. The well has been holding steadily at around the figure named and shows a tendency to increase. A swabbing test will be made as soon as officials arrive. Same firm's No. 56 State, Section 6-19-28, in the Artesia Pool, is drilling at 2,550 feet, and Leonard & Levers' No. 1 Haggerty, NE NW, Section 18-16-30, is fishing at 2,140 feet. R. D. Compton's No. 1-C Vandergriff, NE SE, Section 1-17-27, is drilling at 1,850 feet in shale. In the Twin Mounds district, George F. Getty, Inc.'s No. 1 Bates & Martin, C SE SW, Section 31-20-29, is reported temporarily abandoned at 342 feet where it had a fishing job, and the same firm has made a location for No. 3 Bates & Martin, SE cor. SW, Section 31-20-29. Sullivan & Randall's No. 1 State, NW cor. SW, Section 19-20-30, in the same district, is shut down at 235 feet.

In Chaves County, Snowden & McSweeney's No. 1 Merchant, NW NW, Section 27-15-23, on the Coontail Dome, is drilling at 3,554 feet in red rock, and R. T. Neal and others' No. 1 Russell, NW NW, Section 21-14-25, near Hagerman, is drilling at 1,140 feet after straightening a crooked hole. The Transcontinental-California Oil Co.'s No. 1 Robbins, SE cor., Section 1-14-28, 8 miles east of Hagerman, is building rig for a 4,000-foot test. L. B. Tannehill's No. 1 Butler, SE cor., Section 15-12-24, is bottomed at 400 feet and driving the 12½-inch to bottom.

In De Baca County, the Transcontinental-California Oil Co.'s No. 1 McWhorter, SW NW, Section 6-3s-22, is drilling at 2,895 feet in red shale. It had a slight show of oil at 2,875 feet.

San Juan County

In the northwestern part of the State, in San Juan County, the Angel Peak Oil Co.'s No. 1 Garland, NE NE, Section 11-28-11, in the Kutz Canon area, topped the Picture Cliff sand at 1,820 feet and is drilling at 1,850 feet. The well gauged 1,616,000 feet of gas at this depth. The plans are to pull the 12½ and 10-inch strings. The 8¼-inch was cemented at 1,815 feet. The sand is estimated to be 190 feet thick. The intentions are to drill on down to the Mesa Verde at 3,000 feet if commercial production is not encountered. This is the third gas well to be drilled in that area and it is about 1 mile to the southwest of the nearest and appears to be running 31 feet higher. The three wells have a capacity of 8,000,000 feet of gas and it is probable the gas will be piped to Farmington. The Childers Drilling & Producing Co.'s No. 2, NW NW, Section 24-31-16, on the Westwater structure in the Ute Indian reservation, is ready to drill into the Dakota. The total depth is 2,020 feet, where the 6¼-inch was set. The 8¼-inch is at 1,712 feet. The bottom is at the base of the Mancos shale. The well is 600 feet from No. 1 drilled by the same interests in 1926, which was abandoned at 2,054 feet in the top of the Dakota where it was making considerable gas. The hole was lost without a test on account of a bad joint of pipe.

The Marland Oil Co. has acquired a Navajo Indian lease on 1,440 acres in this same section on the Chimney Rock structure in Townships 30 and 31, Range 17, at an auction sale at Shiprock. The company bid 15 cents an acre, and its bid was the only one submitted. It is southwest of the No. 1 lease upon which a well was drilled showing some gas, but no oil.

The Continental Oil Co.'s No. 17, C NE, Section 2-29-11, a Pennsylvanian test on the Rattlesnake Dome, again is making new hole at a total depth of 6,394 feet. The Milwaukee-New Mexico Syndicate's No. 1 Beardsley, C NE, Section 30-28-11, Kutz Canon district, is preparing to resume at 1,050 feet. It is equipped with a standard rig. The Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor., Section 20-28-10, is cleaning out at a total depth of 650 feet.

In Rio Ariba County, A. M. Berringer,
(Continued on Page 88)

ELEVEN TESTS IN THE DEEP LIME UNDER WAY IN TURNER VALLEY

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Feb. 9.—Though extremely cold weather has interfered with drilling operations throughout Alberta, and even in the Turner Valley Field, considerable progress is being made with development work. In the Turner Valley there are now 11 unfinished tests drilling in the deep lime, several close to the producing horizon. These include four tests being drilled by Royalite Oil Co., two by McLeod Oil Co., and one each by the Home Oil Co., Calmont Oils, Spooner Oils, Regent Oil Co. and Illinois-Alberta Oils.

Royalite Oil Co.'s No. 13, LSD 6, Section 13-20-3w5, is down 4,946 feet, some 300 feet in the lime, and cleaning hole for a production test. Royalite Oil Co.'s No. 16, LSD 2, Section 12-20-3w5, is standing cemented in the top of the lime at 4,711 feet; this test is close to several good producers, and may be expected to get the crude naphtha horizon with only a little more drilling. Royalite's No. 18, LSD 15, Section 12-20-3w5, is standing cemented in the top of the lime at 3,826 feet; it is 200 yards due south of one of the big producers, Royalite's No. 8, and close to Illinois-Alberta's No. 1 and Royalite's No. 7 producers. On the other hand, Royalite's No. 14 LSD 4, Section 7-20-2w5, has been shut down at 3,252 feet, thawing out the lines.

Royalite's No. 12, LSD 3, Section 13-20-3w5, is at 3,158 feet and repairing rig. Royalite's No. 15, LSD 1, Section 12-20-3w5, is making a production test at 3,000 feet. Royalite's No. 17, LSD 13, Section 6-20-2w5, is at 3,965 feet and making a production test. Royalite's No. 19, LSD 5, Section 6-20-2w5, has cemented 10-inch casing at 3,611 feet. Royalite's No. 20, LSD 7, Section 13-20-3w5, is at 3,020 feet and putting steam heaters in the rig. Royalite's No. 21 is drilling at 2,070 feet.

Foothills Oil & Gas Co.'s No. 2, LSD 8, Section 1-20-3w5, which produced for some months from a light crude horizon in the Dakota, has resumed drilling at 3,707 feet and will be carried to the deep lime. Foothills' No. 3 is rigging up.

South End Turner Valley

In the south end of the field, Home Oil Co.'s No. 1, LSD 10, Section 20-19-2w5, is at 5,230 feet and putting steam heaters in derrick. Home's No. 3, LSD 14, same section, is drilling at 4,432 feet. Home's No. 4, same LSD, is at 1,397 feet and running 15½-inch casing. North West Associated's No. 1, LSD 6, same section, is drilling at 3,381 feet.

Southwest Petroleum Co., a new Imperial subsidiary in the Turner Valley Field, has purchased a controlling interest in 640 acres of leases south of and adjacent to the Mayland Oil Co. acreage in the southern end of the field from I. W. Solloway of the brokerage firm of Solloway, Mills & Co. Southwest Petroleum's No. 1 has been located on this acreage and is working on derrick. The vendors of the acreage retain an interest through acceptance of Southwest Petroleum shares, but Imperial Oil, Ltd., holds more than 50 per cent of the Southwest Petroleum stock.

Dalhousie Oil Co. shareholders held their annual meeting at Calgary recently when further steps were taken in the direction of a permanent organization. The shareholders approved the transfer to the Royalite Oil Co. of 51 per cent of the 3,000,000 shares of the Dalhousie company, in pursuance of an agreement between R. B. Bennett, trustee, and the Royalite Oil Co. dated July 25, 1925. Under this agreement the Royalite company has carried on and financed develop-
(Continued on Page 129)

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New Deep Zones at Santa Fe Springs

Will Result in Deepening of 30 Wells. Production of California Due for Immediate Further Increase

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Feb. 9.—The outstanding development in California during the past week was the discovery of two new oil and gas horizons in the Santa Fe Springs Field of Los Angeles Basin and, while neither has yet been tested out, indications point to the development of substantial production at least on the apex of the structure. Two new sands picked up will probably be designated as the O'Connell and Clarke zones in as much as one was found in George F. Getty's No. 19 O'Connell and the other in the Associated's No. 2 Clarke. Some discussion has arisen by the simultaneous discovery of these two zones and while some operators are of the opinion that this is the same sand others contend that two separate zones have been encountered.

The supposition that two distinct zones have been picked up is confirmed by the fact that Getty topped the O'Connell zone in the town lot section at 6,413 feet while the Associated cored its sand in the western part of the field at 7,321 feet. This represents a difference of 907 feet in vertical depth and more than offsets the stratigraphic difference of around 250 feet between the two locations. The Richfield Oil Co. confirmed the new deep zone discovery of the Associated by coring a heavily saturated oil sand in its No. 2 Elliott at 7,110 feet. The Richfield was still in the pay at 7,150 feet at last reports but the Associated's No. 2 Clarke passed into a gray sand just above the 7,400-foot level. The latter well had an even 50 feet of oil sand, core samples showing up favorably between 7,321-71 feet. The relatively small amount of oil sand found in the Associated's No. 2 Clarke may be due to its location on the structure as it is situated well out on the extreme western flank and while this well may not result in large production unless an additional penetration is developed it indicates the presence of a much thicker zone on top of the structure. The oil sand found in No. 2 Elliott of the Richfield and No. 2 Clarke of the Associated is undoubtedly the same zone but this horizon does not correlate with the new zone found by George Getty up on top of the structure at 6,413 feet. The Richfield's project encountered the top of the pay 111 feet higher than the top of the oil sand in No. 2 Clarke and it is quite likely therefore that No. 2 Elliott may result in commercial production when put on a test. These two wells are about 1,100 feet apart, the Elliott lease of the Richfield being located northeast of the Associated's Clarke property in the extreme western part of the field. George F. Getty's No. 19 O'Connell, on the other hand, is approximately 3,500 feet east and south of these two projects. The importance of the discovery of oil sand in these two wells lies in the fact that it will result in a resumption of drilling operations in more than 30 wells in the western part of the field which had been suspended following the failure of several deep projects to encounter either the Nordstrom or Buckbee zones.

Seven Oil Sands at Santa Fe

Seven separate and distinct oil zones and one dry gas horizon have been found at Santa Fe Springs up to the present time. The oil zones from top to bottom have been designated as the Foix, Bell, Meyer, Nordstrum, Buckbee, O'Connell and Clarke. The Foix is encountered on top of the structure at about 3,200 feet while the Meyer is tapped around 4,600 feet. The Bell zone lies between the Foix and Meyer and is encountered around 3,650 feet. The Alexander dry gas zone in this field is located at approximately 2,000 feet beneath the surface and while of no great enonomic value it resulted in the loss of several wells due to violent gas blowouts during the early stages of development in 1923. The General Petroleum drilled several wells into this dry gas zone in order to secure gas production for fuel consumption but this work was of minor consequence. This gas horizon has been in a depleted condition for several years but recently entered the limelight again when two drilling wells started blowing simultaneously and ran wild for two or three days before sanding up.

The first development cycle at Santa Fe Springs carried operators down into the Meyer zone in 1923 and this field remained inactive until late in 1928 when deep-zone exploratory work was undertaken as a result of successful deep-zone development at Long Beach. This exploitation resulted in the discovery of the Buckbee zone at Santa Fe Springs by the Wilshire Oil Co. in July, 1928. This company's No. 1 Buckbee showed an initial daily production of 5,000 bbls. from 5,680 feet. George F. Getty subsequently proved up the existence of an intermediate zone of substantial proportions when his No. 17 Nordstrum blew out and burned for 48 consecutive days before being capped and brought under control. This well, from which the Nordstrum zone has derived its name, was officially completed doing 7,000 bbls. of exceptionally clean 35.4 gravity oil and 11,000,000 feet of wet gas daily. Micropaleontologists, after considerable study, decided that both the Nordstrum and Buckbee zones were of Pliocene age and expressed the opinion that still deeper drilling would be productive of satisfactory results as the underlying Miocene had been found productive in all other fields where it had been put to a test. This led George F. Getty to institute additional deep-zone exploratory work with the result that his No. 19 O'Connell has just encountered another probably productive horizon around the 6,400-foot level. The Associated and Richfield Oil companies were drilling ahead simultaneously in the western part of the field, having failed to find either the Buckbee or intermediate Nordstrum zones. They continued work, however, and were rewarded a few days ago with a promise of production when their respective wells are tested out. It remains to be seen, however, just how productive this new deep zone will prove to be in each case as the wells in question are located at some distance from the apex of the structure.

Santa Fe Springs

Daily production in California continued to reflect deep-zone exploitation at Santa Fe Springs with the result that the State output showed another substantial increase during the past week. There are quite a number of new wells scheduled for completion in the deep zone at Santa Fe Springs within the next few weeks and field production will consequently show a further substantial gain. The recent discovery of two new deep horizons in this field by George F. Getty, the Associated Oil Co., and the Richfield Oil Co. is expected to exert an appreciable affect on production and may carry the output of this field to a new high. The potentiality of these new zones have not yet been determined but preparations are being made to give them an early test. It is needless to say that the outcome of this exploration work will be watched with interest especially in view of the fact that it will result in another deepening campaign involving 25 or 30 suspended projects and a large number of wells producing from the Buckbee zone at present, together with those showing small production from the intermediate Nordstrum zone.

Getty's discovery of a new deep horizon around the 6,400-foot level at Santa Fe Springs did not come as a surprise, in fact, it was generally considered that deeper drilling would be productive of favorable results. It remains to be seen just how prolific the new O'Connell and Clarke zones will be but based on geological precedent they should show a substantial yield. This is especially important as these new zones may become important factors in production at an early date as more than 100 projects could be carried down to completion within a short period of five or six weeks. The new O'Connell horizon was encountered at 6,413 feet or about 750 feet below the top of the Buckbee horizon and it is therefore within easy reach of all wells producing from the Buckbee sand, together with approximately 130 incompleted drilling projects rotating ahead below the 5,000-foot level at the present time.

The General Petroleum Corp. continued to head the completion list at Santa Fe Springs and strengthened its position by finishing five new wells during the current week. One of these, incidentally, turned out to be the largest well finished since deep-zone exploitation got under way late last year. This was No. 204 Santa Fe which came in flowing at the rate of 10,500 bbls. daily from 5,885 feet and tanked 9,140 bbls. of clean 34.6 grav-

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
California Western Oil Co., No. 1 Elkins, Ventura Co.	28- 4-19	2,951	suspended
Exline, Emma, No. 1 Saticoy, Ventura Co.	33- 3-21	2,412	suspended
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	4,660	hd. sd. drilling
American Oil Co., No. 1 Camarillo, Ventura Co.	33- 2-20	780	hd. sd. drilling
Star Pet. Co., No. 2 Canet, Ventura Co.	13- 3-23	6,775	suspended
Bolsa Chica, No. 1 Temescal, Ventura Co.	4- 4-18	708	hd. sd. drilling
The Texas Company, No. 1 Hueneme, Ventura Co	...	....	location
Miley, E. J., No. 2 Casitas, Ventura Co.	12- 3-21	785	suspended
Shell, No. 1 Marr, Simi, Ventura Co.	31- 3-17	1,601	hd. sd. drilling
Continental, No. 1 Sulphur Mountain, Ventura Co.	21- 4-22	3,509	br. sh. drilling
Continental, No. 2 Sulphur Mountain, Ventura Co.	22- 4-22	4,789	br. sh. drilling
Milham Expltn., No. 1-A Buttonwillow, Kern Co.	8-28-23	4,662	gas well
Milham Expltn., No. 2 Buttonwillow, Kern Co.	8-28-23	2,730	gas well
Milham Expltn., No. 3 Buttonwillow, Kern Co.	8-28-23	2,694	gas well
Milham Expltn., No. 4 Buttonwillow, Kern Co.	6-28-23	2,670	gas well
Milham Expltn., No. 5 Buttonwillow, Kern Co.	5-28-23	2,500	gas well
Milham Expltn., No. 6 Buttonwillow, Kern Co.	8-28-23	2,676	gas well
Milham Expltn., No. 7 Buttonwillow, Kern Co.	6-28-23	2,720	suspended
Milham Expltn., No. 8-A Buttonwillow, Kern Co.	8-28-23	Rig	rigging up
Doheny-Stone, No. 1 Salisbury, Kern Co.	7-29-24	4,631	redrilling
Southern Calif. Gas Co., No. 1 Buttonwillow, Kern Co.	4-28-23	4,272	suspended
Southern Calif. Gas Co., No. 2 Buttonwillow, Kern Co.	27-28-23	Rig	suspended
Lincoln Drlg. Co., No. 1 Buttonwillow, Kern Co.	6-28-23	190	suspended
Richfield Oil Co., No. 1 Semitropic, Kern Co.	21-26-22	4,760	redrilling
Richfield Oil Co., No. 2 Semitropic, Kern Co.	36-27-23	507	sd. drilling
Pacific Eastern, No. 1 Union Ave., Kern Co.	6-30-28	5,640	suspended
Pacific Eastern, No. 2 Union Ave., Kern Co.	6-30-23	4,500	suspended
Pacific Eastern, No. 3 Union Ave., Kern Co.	6-30-28	4,443	gas, shut in
Pacific Eastern, No. 5 Union Ave., Kern Co.	5-30-28	4,991	suspended
Stabler, W. W., No. 1 Comanche Point, Kern Co.	23-32-29	3,341	br. sh. drilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	962	gr. sd. drilling
Midway Northern, No. 1 Edison, Kern Co.	29-29-30	3,841	cleaning out
Delzel, S. A., No. 1 Delano, Kern Co.	4-26-27	3,671	gr. sd. drilling
Elmer Oil Co., No. 1 Shafter, Kern Co.	8-28-25	5,504	fishing
Elmer Oil Co., No. 1 Rosedale, Kern Co.	33-29-26	Rig	suspended
Standard, No. 1 San Emidio, Kern Co.	35-11-22	3,793	fishing
Union, No. 1 San Emidio, Kern Co.	5-10-21	2,320	hd. sd. drilling
Currency Pet. Co., No. 1 Vineyard, Fresno Co.	28-21-14	1,210	gr. sh. drilling
Hornaday & Huggins, No. 1 Kerman, Fresno Co.	32-14-18	Rig	rigging up
Union, No. 1 Huasna, San Luis Obispo Co.	34-32-15	3,232	redrilling
Union, No. 1 North Huasna, San Luis Obispo Co.	12-32-14	2,880	br. sh. drilling
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	3,600	br. sh. drilling
Dollar Oil Co., Well No. 1, San Luis Obispo Co.	13-32-22	Rig	rigging up
Sequoia Oil Co., Well No. 2, San Mateo Co.	15- 7- 5	1,605	suspended
Sunset Pacific, No. 1 Saratoga, San Mateo Co.	13- 7- 4	Rig	suspended
Calhoma Oil Co., No. 1 Livermore, Alameda Co.	9- 3- 3	1,541	hd. sd. drilling
Foster & Hammill, Well No. 1, Alameda Co.	21- 3- 3	464	hd. sd. drilling
R. Y. Hanlyn, Well No. 1, Alameda Co.	3- 5- 2	360	suspended
Shell, No. 1 Guadalupe, Santa Barbara Co.	36-10-35	1,750	hd. sd. drilling
Shell, No. 2 Goleta, Santa Barbara Co.	36- 5-31	990	sd. drilling
Standard, No. 1 Point Conception, Santa Barbara Co.	.....	306	sd. drilling
Standard, No. 1 Point Arguello, Santa Barbara Co.	X- 7-35	971	br. sh. drilling
Bankline Oil Co., No. 1 Mesa, Santa Barbara Co.	X- 4-27	2,020	br. sh. drilling
System Oil Co., No. 1 Orcutt, Santa Barbara Co.	36-10-34	Rig	rigging up
Petroleum Securities, No. 1 Santa Ynez, Santa Barbara Co.	.....	.....	location
Tepesquit Oil Co., Well No. 1, Santa Barbara Co.	3- 9-32	2,710	suspended
Becker, Geo. F., No. 1 Summerland, Santa Barbara Co.	33- 4-25	3,090	suspended
Channel Oil Co., Well No. 1, Santa Barbara Co.	29- 4-27	6,304	cleaning out
Continental, No. 1 Carpenteria, Santa Barbara Co.	33- 4-25	3,975	oil show
Colusa Oil Co., Well No. 1, Colusa Co.	31-15- 4	380	redrilling
Nuna Oil Co., Well No. 1, Colusa Co.	19-15- 5	400	suspended
Superior Oil Co., No. 1 Calivada, Colusa Co.	31-15- 4	1,011	suspended
North Counties Oil Co., Well No. 2, Humboldt Co.	36- 2- 1	2,205	suspended
Humboldt Oil Co., Well No. 1, Humboldt Co.	6- 2- 1	3,041	redrilling
Kuhns, H. L., Well No. 1, Merced Co.	9-12- 9	1,570	suspended
Angiola Oil Co., No. 1 Angiola, Tulare Co.	27-22-23	3,921	hd. sd. drilling
Shell, No. 1 Dudley, Monterey Co.	15-22- 9	116	sd. drilling
Brown Oil Co., No. 1 Parkfield, Monterey Co.	.....	....	location

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Ring Pet. Co., No. 1 Inglewood, Los Angeles Co.	28- 2-14	761	sd. drilling
Petroleum Securities, No. 1 Hermosa, Los Angeles Co.	32- 3-14	606	sd. drilling
Western D. & P. Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	818	sd. drilling
Mont. Park Oil Co., No. 1 Browning, Monterey Park	26- 1-12	4,420	suspended
Mont. Park Pet. Co., No. 1 Jepson, Monterey Park	25- 1-12	3,937	suspended
Rio Grande, No. 1 Downey, Los Angeles Co.	34- 2-12	3,311	hd. sd. drilling
Jackson, R. W., No. 1 Whittier, Los Angeles Co.	19- 2-11	Mtl.	building rig
Burlingham Pet. Co., No. 1 Compton, Los Angeles Co.	17- 3-13	Rig	rigging up
Security Pet. Co., No. 1 Lynwood, Los Angeles Co.	13- 3-13	5,333	abandoned
Richfield, No. 1 Maywood, Los Angeles Co.	13- 2-13	4,240	sd. sh. drilling
Easton & Smith, No. 1 Calabasas, Los Angeles Co.	19- 1-17	2,582	suspended
Russell Oil Co., No. 2 Joughin, Los Angeles Co.	25- 3-17	1,500	hd. sd. drilling
Pomona Oil Co., Well No. 1, Los Angeles Co.	32- 1- 8	1,090	hd. sd. drilling
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Richfield Oil Co., No. 1 Puente, Los Angeles Co.	9- 2-10	3,434	recemented
Calif. Eastern, No. 1 Wickham, Los Angeles Co.	32- 5-17	3,170	coring
Calif. Eastern, No. 1 Devil Canyon, Los Angeles Co.	21- 5-17	Mtl.	building rig
The Texas Company, No. 1 Anaheim, Orange Co.	35- 4-10	3,806	hd. sd. drilling
Bastanchury Ranch Co., Well No. 1, Orange Co.	21- 3-10	Rig	suspended
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	3,482	suspended
West. Drlg. & Prod. Co., No. 1 Newport, Orange Co.	18- 6-10	4,461	cleaning out
West. Drlg. & Prod. Co., No. 2 Newport, Orange Co.	18- 6-10	Rig	rigging up
Hall Pet. Co., No. 1 Murrietta, Riverside Co.	23- 7- 3	975	fishing
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,232	set pipe
Davenport O. & G. Co., No. 1 San Marcos, San Diego Co.	30-12- 8	892	suspended
Turner, S. S., No. 1 Escondido, San Diego	25-12- 2	1,660	hd. br. lime

ity oil during the initial 24-hour test. This new well is also yielding 4,000,000 feet of natural gas which has a theoretical gasoline content of two gallons for each 1,000 feet. No. 229 Santa Fe was also a large producer when finished several days ago at 5,892 feet as it registered an initial daily production of 5,010 bbls. daily. No. 227 Santa Fe, which blew in prematurely a few weeks ago, was recompleted during the early part of the current week and is making 4,390 bbls. of 33.6 gravity oil daily from 5,886 feet at the present time. No. 208 Santa Fe turned out to be the smallest well finished by the General Petroleum since the company undertook its present comprehensive deep-zone development work. This new well, which was carried down to 5,783 feet and finished with an 8⅝-inch oil string, came in flowing 1,220 bbls. of clean 34.6 gravity oil. No. 228 Santa Fe was also a small well as it only registered an initial of 1,300 bbls. The Texas Company increased its list of producers by finishing No. 3 Baldwin doing 4,000 bbls. of 34.4 gravity oil daily from 5,295 feet and No. 6-AWeaver, which tanked 1,620 bbls. during the initial test from 4,955 feet.

The St. Helens Petroleum Co., which recently entered the refining and marketing field, recompleted No. 1 Hill during the early part of the week flowing 2,810 bbls. of exceptionally clean 34.7 gravity oil daily from 5,806 feet. This well was considered finished a few weeks ago, but was redrilled and deepened because of its failure to hold up, due probably to water trouble. The Second Twin Bell Syndicate finished its second successful producer on the Grohs lease a few days ago when No. 5 was brought in under a natural flow doing 4,470 bbls. of 34.2 gravity oil daily. The Universal Oil Co. just about broke even during the past week as the output of No. 9 Blanchard, a new well which made 2,650 bbls. daily from 5,695 feet, offset the production lost when No. 7 Blanchard and No. 2 O'Connell suddenly died. Three other wells also ceased production during the early part of the week, two of which were relatively large producers. These were No. 3 Green of the Associated, which had been flowing 2,675 bbls. daily, and No. 5 Batson, a recent completion of The Texas Company, which had been flowing 3,722 bbls. daily. George F. Getty's No. 18, which had been producing from 6,080 feet, also died a few days ago and it will probably be immediately carried down into the new deep zone which this operator picked up at 6,415 feet. The George F. Getty organization also chalked up a new well during the week, No. 24 Santa Fe, showing an initial of 4,710 bbls. daily from 5,926 feet. The Superior Oil Co. finished its second well at Santa Fe Springs by completing No. 4 Wardman during the latter part of the week but this new project failed to register large production. It was carried down to 5,899 feet, from which depth it showed an initial of 1,850 bbls. daily. The Superior started out with a burst of speed shortly after completion of the Wilshire's deep-zone discovery last year but too much pressure on the bit caused substantial deviations in both wells undertaken. As a result of this bearing down both holes had to be redrilled and deepened almost from the grass roots down. The Richfield Oil Co., which picked up a new deep horizon at Santa Fe Springs a few days ago, successfully completed No. 1 Wardman, a new well, and incidentally increased its daily production 4,280 bbls. This project, which is also making 6,000,000 feet of wet gas daily, was carried down to 5,794 feet and finished with a 6⅝-inch oil string. The Rio Grande Oil Co., which has a 50 per cent interest with the Barnsdall Oil Co. in the prolific Elwood Terrace Field in Santa Barbara County, finished its initial completion at Santa Fe Springs doing 1,790 bbls. of 34.7 gravity oil daily from 5,702 feet. No. 6 Dewenter of the Associated Oil Co., one of the last wells finished during the current week, tanked 2,970 bbls. of clean 34.4 gravity oil during the initial 24-hour test from 5,293 feet.

Elwood

No. 5 Bell Luten, which the Barnsdall and Rio Grande interests finished in the Elwood Field of Santa Barbara County on January 31, is still holding up in good shape and no immediate decline is anticipated. This new producer, which came in flowing 6,000 bbls. per day, has been pinched back in order to maintain as high a back pressure as possible. Current production of this well approximates 5,200 bbls. of unusually clean 36.5 gravity oil and 3,000,000 feet of wet gas daily. No. 5 Bell Luten is the most westerly producer finished in the Elwood Field up to the present time. The rotary equipment and draw works from this well were moved to No. 6 Bell Luten, one location northwest, and spud has already been made. No. 3 Doty passed the 2,500-foot level a few days ago and unless something unforeseen develops should be the next successful producer finished by the Barnsdall and Rio Grande companies. There are quite a number of outposts under way in the Elwood area but none of them appear to have any chance of cutting in on any of the potentially productive acreage, as all developments indicate that the Barnsdall and Rio Grande control every single core of producing land. The deepest of these outposts is No. 1 Storke of the Petroleum Securities, rotating ahead in a hard brown shale at 4,890 feet, followed by Jim O'Connell's No. 1 Campbell, which passed the 4,710-foot level a few days ago. The Bankline Oil Co. gave up its attempt several weeks ago to develop production on the A. & D. property, adjoining the Barnsdall and Rio Grande's Bell Luten property on the north, work being suspended at 4,690 feet. Dunlapp & Knapp also failed to duplicate the success of the Barnsdall as drilling operations were suspended at 4,250 feet in their No. 1 Elwood, a direct offset of the Barnsdall and Rio Grande's No. 1 Elwood Acres in the extreme eastern part of the field, which is down 4,735 feet at the present time.

Kettleman Hills

Drilling operations in the recently discovered Kettleman Hills Field of Kings County are getting under way quite rapidly considering the difficulties under which these operators are working. The scarcity of water has held up drilling operations in several instances pending the drilling of water wells. The Standard piped in its water supply from the Hills, a distance of approximately miles, and is as a consequence a jump ahead of some of the other operators. The lack of favorable roads and difficulty in securing boiler fuel has also retarded work, although the power factor has been minimized to some extent by the utilization of electrical energy. Electricity is available to practically all operators if desired but some are using steam the boiler fuel being either oil or gas depending upon operating conditions. The Milham Exploration Co., with two wells under way, is utilizing natural gas in the drilling of No. 2 Elliott and No. 1 Bell as its discovery, No. 1 Elliott, is yielding an ample supply in excess of the minimum guaranteed pipe line delivery. The Standard, on the other hand, has resorted to electrical energy. This company, incidentally, has three wells already under way with two new rigs in course of construction. The initial completion in the Kettleman Hills Field indicates the probability that operators will be obliged to drill to extreme depths in order to tap the Elliott zone discovered by the Milham Exploration Co. a few months ago. This will consequently slow up work and it will be at least several months before another new well is completed in this area unless the General Petroleum Corp. should perform a miracle and succeed in overcoming the mechanical trouble which has been holding up work in No. 2 Ochsner at 6,766 feet. This is the deepest potential producer in the Kettleman Hills Field at the present time as wells spudded in since the completion of the Milham discovery are all above the 3,000-foot level. Drilling operations in this field up to the present time tend to indicate that pioneers will experience considerable difficulty during the course of work. The Long Beach Field has quite a number of wells producing from sands below the depth at which production was secured at Kettleman Hills and yet operators have not encountered any unusual difficulty in completing wells in the former area. The formation in the Kettleman Hills district is not conducive to as fast drilling, however, and will consequently require more time from spud to completion. It will probably be more or less comparable with the Ventura Avenue Field in elapsed drilling time as this district is one of the hardest California fields in which to drill.

Seal Beach

The Seal Beach Field of Los Angeles Basin is apparently about to witness a slight revival in development work after a dormant period of almost a year, during which time drilling operations have been arbitrarily reduced to a minimum in the interest of conservation and economic development. The Marland, Associated and Standard control the entire amount of productive acreage in the Seal Beach Field, in contrast with the intensely developed town lot area at Alamitos Heights to the west, and their development work is being mutually limited in order to create a reserve for the future. Drilling operations at Seal Beach have been increasing somewhat during the past 30 or 60 days and another new well was spudded in early this week. The Marland Oil Co. is running seven strings of tools, the Standard Oil Co. eight and the Associated Oil Co. four. These are not all new wells, however, as some of them are being redrilled and deepened from the Selover zone. The Texas Company completed No. 1 Lovell in the Alamitos Heights town lot section of the Seal Beach Field several days ago and this well showed an initial of 600 bbls. daily from the deep Wasem or Bonner zone. The output from this well, which was bottomed at 6,582 feet and finished with a 5¾-inch oil string cemented through perforations at 6,453 feet, is still cutting about 20 per cent and may result in the institution of corrective measures.

Rosecrans

The Rosecrans Field of Los Angeles Basin, like Seal Beach, is also witnessing

(Continued on Page 121)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	.....	1,105,624
Diesel and gas oil	141,816	20,259	.....	.....	389,566	357,089
Gasoline	156,302	22,329	523,204	74,743	2,417,479	1,652,625
Coastwise—						
Crude oil	497,354	71,051	878,590	125,513	3,403,777	1,688,435
Fuel oil	391,214	55,888	189,739	27,106	2,137,721	2,428,920
Diesel and gas oil	.....	.....	7,075	1,011	88,022	170,723
Gasoline	144,585	20,655	284,710	40,673	1,313,166	1,486,478
Kerosene	.....	.....	.....	.....	1,179	13,050
Naphtha distillate	.....	.....	.....	.....	.....	30,500
Exports—						
Crude oil	.....	.....	135,625	19,375	342,865	323,001
Fuel oil	254,687	36,384	407,030	58,147	2,182,274	3,386,195
Diesel and gas oil	33,598	4,800	.....	.....	236,213	413,284
Gasoline	.....	.....	202,397	28,914	1,230,018	619,526
Kerosene	.....	.....	181,735	25,962	397,600	595,890

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	167,695
Gasoline	77,870	11,124	79,142	11,306	411,068	154,238
Lubricants	.....	.....	.....	.....	.....	69,854
Coastwise—						
Fuel oil	100,659	14,380	92,518	13,217	406,146	488,305
Diesel and gas oil	11,983	1,712	11,983	1,712	27,989	18,409
Gasoline	72,884	10,412	40,142	5,735	419,900	378,330
Kerosene	4,954	708	2,504	358	11,738	87,248
Exports—						
Crude oil	.....	.....	.....	.....	71,453	20,073
Fuel oil	.....	.....	51,080	7,297	51,080	437,306
Diesel and gas oil	.....	.....	9,946	1,421	62,815	.....
Gasoline	.....	.....	.....	.....	546,954	582,447
Kerosene	.....	.....	.....	.....	68,030	80,391
Lubricants	.....	.....	.....	.....	13,693	.....

NINE COMPLETIONS IN MUSKEGON; MANY DUNDEE TESTS SHUT DOWN

By Special Correspondent

MUSKEGON, Mich., Feb. 9.—Despite the order of the Standard Oil Co. of Indiana reducing the price of Dundee crude oil to 50 cents a barrel and the amount purchased to 10 per cent of the potential daily production, there were nine completions in the Muskegon Field this week. Three wells were dry in the Dundee formation, three were abandoned at various depths and three were producers in the upper Traverse, lower Traverse and Dundee pay sands respectively.

The largest new producer, the Reed Oil Co.'s No. 4 Young, SE NE, Section 11-10-17, Laketon Township, was brought in with an estimated daily flow of 1,000 bbls. from the Dundee formation. Lack of field tankage and the fact that only 10 per cent of the oil already filling the tanks came from No. 1 Young made it impossible to get an accurate gauge of the new well. Oil was struck at 2,060 feet and at 2,063 feet filled the hole in less than an hour with more than 80 bbls.

The second largest new producer was the Johnson Oil Refining Co.'s No. 1 Grotefeld, NE NE, Section 12-10-17, also in Laketon Township. It came in with a flow of about 3,000,000 feet of gas and 75 bbls. of oil in the upper Traverse pay sands at 1,672 feet. The top of the Traverse was hit at 1,670 feet and the oil and gas were unexpected at 2 feet in.

The only new oil producer in Muskegon Township was the Central Gas & Oil Co.'s No. 2 Joldersma, NE SW, Section 8-10-16, which came in with a flow of about 50 bbls. of oil from the lower Traverse pay sand at 1,867 feet. It will be cased and drilled deeper. The same is true of the Johnson company's Grotefeld well.

Abandoned Holes

Three wells in Muskegon Township, two northeast of the salt water area and one near the end of Jackson Avenue, were dry in the Dundee formation and are to be plugged.

Bottom salt water was hit in the Wolfe Oil Co.'s No. 1 Shanks Brothers, SW SW, Section 14-10-16, at 2,165 feet and it was abandoned at 2,174 feet. It is located east of the Continental Motors Corp. producers in the upper Traverse.

The other two dry holes were offsets to one another: The Great Western Oil & Gas Co.'s No. 1 Warren, SE NW, Section 4-10-16, and Estes and Scott's No. 1 Boyce, NE NW, Section 4-10-16. The former was dry at 2,093 feet and the latter struck bottom salt water at 2,075 feet with the bottom of the hole at 2,077 feet. Casing was left in the Warren well as it may be deepened if a near-by test to 3,500 feet is successful.

The Swastika Oil & Gas Co.'s No. 1 Barr, NW NE, Section 14-10-16, near the Wolfe-Shanks well, was abandoned as dry in the Dundee formation at 2,115 feet although the bottom water had not yet been encountered.

M. R. Marston's No. 1 Selzenick, NW NW, Section 24-10-16, about a mile east of the Shanks Brothers well, was abandoned at 1,865 feet with formations running about 100 feet low.

J. V. Howard abandoned his No. 1 Van Brunt well in the same locality, SE NE, Section 15-10-16, at 200 feet before the drive pipe was landed.

Two other drilling wells in Muskegon

(Continued on Page 87)

There is no parallel

in the Petroleum Industry to the demand for Bettis Protectors. On the morning of February 2 the 100,000th Protector was shipped. It is now one of the 6,153 in service for one of the largest oil companies operating at Ventura, the hardest drilling field in California.

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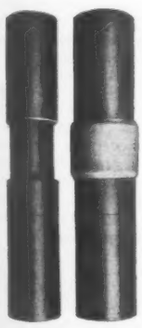

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Drilling Campaign in Central Ohio

Six Wells to Be Drilled North of Tiffin and Three East. One Each to Be Drilled in Hancock and Sandusky Counties

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Feb. 11.—Little was accomplished in any of the divisions of the Central West Field outside of central Ohio and Michigan, with central Ohio leading by big odds in the number of completions, while Michigan gets the larger production from fewer completions, being a virgin field. Outside of these two fields little work will be done during the winter months, but in early spring with the roads in shape there will be considerable new development.

Reports from the Tiffin Field, in Seneca County, Ohio, and on the eastern edge of the old Lima Field of northwestern Ohio, are that a contract has been made with Cessna, Feasel and Luman, drilling contractors, for the drilling of 20 wells over a large area, work to commence early in the spring. There are hopes of finding a large supply of gas north of Tiffin, and if gas is found in commercial quantity, it will be piped to Tiffin. Six of the wells will be drilled north of Tiffin and three wells east of Tiffin. One is to be drilled in Sandusky County, one in Hancock County and the others in different parts of the State. One well will also be drilled in Kentucky. The wells to be drilled north of Tiffin have already been located and are to be put down on the W. W. Martin, Harvey Wright, Albert Abbott, Mary E. Crum, A. C. Hough and Harry W. Beck farms. The well listed for Sandusky County will be drilled on the Mary Betts farm, in Jackson Township, near Helena, not far removed from old development work in that vicinity. The contract work will be looked after by Stanley Feasel. The first of the wells to be drilled in Seneca County will be on the Haugh farm, and is already reported under way.

Banks and others have drilled in a 100,000-foot gas well in the southeast corner of the R. Nightswander farm, on the oil map as the George Saul farm, in the SE Section 25, Liberty Township, Seneca County and north of Tiffin. Sand was topped at 1,398 feet and drilled 80 feet in the Trenton to a total depth of 1,478 feet. W. E. Richards and others are nearing the sand with No. 3 on the Lawrence Scherger farm, Section 27, same township, while in Jackson Township, same county, between Tiffin and Fostoria, A. R. Smith is drilling No. 16 on the H. L. Smith, Section 8.

In the Findlay Field, Eagle Township, Hancock County, R. T. Rittenhouse drilled No. 6 well, 200 feet from the south line and 600 feet from the west line of the Frank Freed farm, on the oil map as the Peter N. Foltz farm, in the NW of Section 6, which produced an initial of 50 bbls., or in other words put that amount of oil in tanks in 24 hours at a total depth of 1,390 feet or 75 feet into the Trenton formation. This is an exceptionally good well for old territory and may bring about some activity in that part of the county as soon as weather will permit.

In Mercer County, Washington Township, the Recovery Oil & Gas Co.'s test in the southwest corner of the John Litmarger farm, in the SW Section 26, is a very fair gas well at a total depth of 1,176 feet, being 54 feet in the sand.

In Mississinewa Township, Darke County, the Cole Oil & Gas Co.'s No. 20 well, 500 feet from the north and west lines of the W. C. Disher farm, in the NW Section 11, had an initial production of 8 bbls. Sand was topped at 1,220 feet and the oil found at 45 feet in the Trenton.

The Forest Gas Field along the lines of Hancock-Wyandot and Hardin Counties is due for a revival of drilling for gas, especially on the Lost Dome, one of the largest anticlines in the State of Ohio, according to geologists reports.

CENTRAL OHIO

Twenty-seven completions were reported from the Central Ohio Field since the last review, of which 9 were oil wells with an initial production of 112 bbls., 10 dry holes and 8 gas wells. The new work under way shows 9 new locations and 23 wells started drilling, or a total of 32, which signifies that the field work will continue during almost the entire winter season.

In Ashland County, Mohican Township, W. J. Smith's test on the Guy Humm farm, Section 29, is reported at 25 bbls. initial production and about 250,000 feet of gas. In Perry Township, Curtis and others' No. 7 on the Eliza Devault farm, Section 20, produced 20 bbls. initial from the Berea sand. In Hanover Township, the Ohio Fuel Gas Co.'s No. 2-3,344 on the Albert Fritz farm, Section 12, is a dry hole, as no sand was found. In Greene Township, the Logan Gas Co. is drilling No. 2-3,032 on the John Cowan farm, Section 20. In Orange Township, the Kemrow company's test on the Rolland Brubaker farm, Section 22, is a fairly good gas producer from the Newburg sand at from 2,290 to 2,298 feet. The Logan Gas Co. is drilling No. 1-3,068 on the Charles N. Schooley farm, Section 14. Same company staked a location for No. 1-3,067 on the Ira C. Richards farm, same section, and also made a location on the W. W. Barnhill farm, Section 26. Ohio Fuel Gas Co. is drilling No. 2-3,437 on the Ella Donely farm, Section 33.

In Medina County, Liverpool Township, the Preston Oil Co.'s No. 1,268 on the W. F. Shaffer farm, Section 16, after cleaning out showed an initial production of 12 bbls. Harmon and George are starting a second test on the W. W. Wood farm, Lot 151, Harris Township.

In Lorain County, Carlyle Township, Daugherty and others made a nice gas strike at a second test on the P. K. Clark farm, Lot 19. The Ohio Fuel Gas Co. is drilling No. 1-3,421 on the W. H. Tielties farm, Lot 19, Eaton Township.

Wayne County

In Wayne County, Congress Township, the Ohio Fuel Gas Co. has a very fair gas producer in No. 2-3,352 on the Lillian B. Wood farm, Section 7. Logan Gas Co. is drilling No. 1-3,060 on the Charles V. Oberholzer farm, same section. The Kemrow Co. is starting No. 7 on the Calvin Fry farm, Section 14, Wooster Township. Ohio Fuel Gas Co. is drilling No. 1-3,406 on the Charles F. Kinney, Section 10, Chester Township, and the Logan Gas Co. made a location for No. 1-3,075 on the Gerber & Berg farm, Section 14, Sugar Creek Township.

In the Cleveland Field, Cuyahoga County, L. M. McGrath has a light gas well found in 5 feet of sand on the L. M. Conant farm, Lot 37.

In Richland County, Monroe Township, the Ohio Fuel Gas Co. has the best gas well of the year in No. 1-3,393 on the Jane M. Ohler farm, Section 28. Same company made a location on the Willi... E. Pritchard farm, Section 21, and t... Logan Gas Co. staked a location on t... C. C. Arehart, Section 22.

In Coshocton County, Monroe Tow... ship, the Ohio Fuel Gas Co. cleaned ou... No. 2-3,105 on the Peter Lepley farm... Section 1, which developed into a duste... In Clark Township, the Ohio Oil Co.... second test on the A. G. Epley farm, ... reported good for but 2 bbls. at a dept... of from 720 to 727 feet. The Logan Ga... Co. is drilling No. 1-3,070 on the Vict... Shiebe farm, Section 1, same township.

Summitt County

Summitt County was pretty well ke... by dry holes since the last review, ther... being four. In Franklin Township, F. A... Brendall and others found one on the... George Grubb farm, Section 22. The... East Ohio Gas Co. got one in a secon... test on the George Bliler farm, Sectio... 28. A pretty large gas producer wa... recently found on this lease. The Colum... bia Chemical Co.'s second test on the... O. C. Barber farm, Section 4, was an... other dry one at from 3,793-3,818 feet... where it found plenty of salt water... In Spring Township, Zinkel and other... got the fourth dry hole in a test on the... George Chenowith farm, Section 5. The... East Ohio Gas Co. made a location on... the F. S. Kiefer farm, Section 18, Green... Township.

In Licking County, Fallsburg Town... ship, Wittmer Properties, Trustee, found... a dry hole in No. 3 on the Lida Martin... farm, Section 23, at from 2,823-63 feet... Hulse & Kundtz are drilling on the... U. A. Moran farm, Section 11. In Perry... Township, the Hope Construction & Re... fining Co. found a 10-bbl. producer in... No. 1 on the Sarah Rector farm at from... 598 to 610 feet. Hulse & Kundtz drilled... a test on the Jerry Cullison farm, Sec... tion 2, same township, and found the... Clinton formation dry at from 3,637-... 3,750 feet, and plugged it back to the... Berea sand at from 810 to 830 feet,... making a 3-bbl. pumper. Settles Oil Co.... struck a light gas well in No. 5 on the... Jacob Lethers farm, Section 8, at from... 785 to 795 feet. Armstrong and Lyth... are drilling No. 11 on the J. W. L... Motherspaw farm, in Franklin Town... ship. In Hopewell Township, the Pure... Oil Co.'s second well on the Art Orr... farm, Section 23, produced 31 bbls. ini... tial from a depth of from 3,070-3,110... feet. Wehrle Oil & Gas Co. is drilling... on the Alfred Kreager farm, Section 35.

Muskingum County

In Muskingum County, Falls Town... ship, William Kline and others drilled a... dry hole o nthe Guy C. Ellenberger farm... fourth-quarter section. Sand was found... from 3,433-73 feet, total depth 3,485 feet.... In Highland Township, Fett & Louchey's... test on the Elmer E. Duff farm, Section... 1, pumped but 1 bbl. initial at from... 1,253-64 feet. At a depth of 1,219 feet... a slight showing of gas was found. In... Perry Township, the Rymilper Oil Co. is... drilling on the Harry E. Durto farm. In... Jackson Township, the Pure Oil Co. is... drilling No. 2 on the Floyd Anderson... Section 4, and No. 5 on the George Craw... ford, Section 5.

In Athens County, Ames Township,... Mosure and others have a dry hole in a... second test on the F. E. Phillips, Sec... tion 13, at 1,374 feet. In Dover Town... ship, the Ohio Fuel Gas Co. is drilling... No. 1-3,431 on the Sugar Creek Coal... Co.'s property, Section 16. In Carthage... Township, the Fairfield Gas Co. is drill... ing No. 4 Aldo McKinley, in fractional... Section 3. In Athens Township, Slade... and Irwin drilled a dry hole in No. 2... on the Joe Nicholson, Section 20, in the... second Berea sand at from 1,177-95 feet.

(Continued on Page 170)

HANCOCK COUNTY, KY., WILDCAT ESTIMATED AROUND 25 BARRELS

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Feb. 11.—One of the important finds in Kentucky since the last review of developments was made by Lewis, Ogle and Maxey, on the Kate Travers farm, between Patesville and Dukes, in the extreme eastern part of Hancock County and near the Breckenridge-Hancock County line, southwest of Cloverport. This well while purely wildcat, is not far removed from the old Drake well drilled in that vicinity years ago. The new well on the Travers farm has been estimated at around 25 bbls. and while not a large producer it may be the forerunner of the opening of another interesting pool for western Kentucky operators to shoot at.

Another well attracting much attention is that of Engle, Berg and others on the Ellis Bartlett 54 acres, northwest of Clear Run, almost directly west of Taffy and southwest of the Ambrose-Weller Pool, in Ohio County. This is practically a wildcat and will probably mean the opening of an extension to the southwest of the Ambrose-Weller Pool. The well produced from 19 feet of pay sand and indicates a 100-bbl. producer when put on the pump and with a shot may increase its production as the territory is virgin.

The recent cut of 10 cents a barrel on western Kentucky crude will not affect development to any extent and work will remain active unless weather conditions make it impossible to move to new locations within the defined limits or to wildcats of which there will be plenty when better weather comes.

The Illinois Pipe Line Co. handles the largest portion of the crude produced in the western part of Kentucky, the Producers Pipe Line Co. taking crude from Ohio and Daviess Counties and the Paragon Development Co. taking the production from Monroe, Cumberland, Clinton and Barren Counties. The Stoll Oil Refining Co. has a gathering line in the Glasgow Field of Barren County.

Week's Work

A summary of the week's work in the Kentucky fields shows 40 completions, 16 producers with an initial production of 864 bbls., 21 dry holes and 3 gas wells.

County—	Comp.	Oil wells	Prod.	Dry	Gas
Daviess	21	7	204	14	0
Ohio	13	8	635	4	1
Hancock	1	1	25	0	0
Clay	1	0	0	0	1
Owsley	1	0	0	0	1
Allen	1	0	0	1	0
Hardin	1	0	0	1	0
Warren	1	0	0	1	0
Total	40	16	864	21	3

EASTERN KENTUCKY

In eastern Kentucky the Petroleum Exploration Co. drilled a gas well on the Keith-Campbell lease in Clay County, and a test on the Sidney Caudill and others' property, in Owsley County, which makes a commercial gas producer. In Clay County, this company is drilling No. 1 George W. Brewer farm, and made a location on the J. F. Johnson farm, same county.

WESTERN KENTUCKY

Some Kentucky operators have invaded the new prospective Harrisburg Field, in Saline County, in the southern part of Illinois, where a recent producer was drilled estimated around 70 to 80 bbls. initially. Young and Ellis, of the Tri-

(Continued on Page 170)

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Butler County, Pa., Pool Holding Up

Pipe Line Handling From 800 to 1,000 Bbls. Daily. New Work in Ravenwood District, Jackson County, W. Va.

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Feb. 11.—Operations have been confined mostly to routine work in the old fields, the new sections having completed no new wells. In Buffalo Township, Butler County, Pennsylvania, there are several wells on top of the sand and ready to drill in when the weather moderates. The pipe line company is handling from 800 to 1,000 bbls. a day and will increase its capacity as soon as the new pumping station has been completed on the McFarlan farm. When this station has been completed the pipe line company will be able to handle 2,500 bbls. a day. If the new wells drilling and starting come in good producers the capacity of the new station will not be too large.

Work in the vicinity of the Hope Construction & Refining Co.'s good producer on the Hiram Robinson farm, in Fallowfield Township, Washington County, is at a standstill. The well, like others in that locality has no pipe line connection and the oil will have to be stored or shipped out in tank cars. If a new pool is developed the Southwest Pennsylvania Pipe Line Co. will extend its line and connect up the wells.

There is considerable new work starting in Ravenwood district, Jackson County, West Virginia. The South Penn Oil Co.'s test on the C. S. McCarty farm is still holding up at 85 bbls. a day. Up to this time the South Penn Oil Co. and the Heck Oil Co. have done about all of the development work in that locality.

SOUTHEAST OHIO

The best results in the southeast Ohio fields were the completion of several good producers in the deep sand territory and one in the shallow sand. However, Southeast Ohio had fewer completions.

In Section 6, Jackson Township, Muskingum County, the Hope Construction & Refining Co. completed and shot in the Clinton sand No. 4 on the W. E. Helphrey farm. It produced 190 bbls. the ensuing 24 hours. This is a larger well than Muskingum County has been completing recently.

In Lot 59, Hardy Township, Holmes County, the East Ohio Gas Co. completed and shot in the Clinton sand No. 4 on the F. M. Nowells farm. It produced 80 bbls. the first 24 hours.

In the NE of Section 32, Enoch Township, Noble County, Harper Brothers have completed in the 700-foot sand a test on the I. N. Harper farm. It is a 5-bbl. pumper. In Jefferson Township, Myra S. Lee is drilling on the Hannah and Mary McGinnis farm. In Center Township, Richard L. Moore and others are drilling on the Lemuel Moore farm.

In the NE of Section 21, Harrison Township, Perry County, William Cline & Co.'s No. 5 on the Burley-Winter farm has been completed and shot in the Clinton sand. It produced 70 bbls. the first 24 hours. In the SE of Section 29, same township, the East Ohio Fuel Gas Co. has a Clinton sand gasser on the H. A. Milligan farm good for 1,900,000 feet.

Fair Producer in Meigs County

Meigs County has just completed a better producer than the average for that county. The Wehrle Co. has completed and shot in the Cow Run sand a second test on the Walter Cross farm. It produced 50 bbls. the first 24 hours. In Section 17, Sutton Township, C. D. Sloan & Co. have started to drill on the J. E. Stobert farm.

Hocking and Washington Counties

In the NE of Section 24, Green Township, Hocking County, the Griffin Producing Co. has a 20-bbl. pumper in the Clinton sand at No. 3 on the Gideon Love farm. In Newport Township, Section 36, Washington County, Burkhart, Mendenhall and others have a light pumper in the Salt sand at a second test on the Mary E. Mendenhall farm.

In the SW of Section 13, Sutton Township, Meigs County, R. A. Tyree & Co. have a 4-bbl. pumper at a second test on the Martin Ebanback farm. In the same township, the Preston Oil Co. is drilling on the Carl J. and William R. Easterday farm.

In Section 12, Perry Township, Licking County, the Preston Oil Co. has drilled through the Berea grit No. 12 on the James C. Wright farm. It is a 10-bbl. pumper. In Section 15, same township and county, the same company's No. 11 on the same farm is a 10-bbl. pumper in the Berea grit. In Section 6, same township, the same company's test on the G. C. Maum farm is showing for a very light pumper in the Berea grit.

Monroe County

On Boston Run, Section 11, Bethel Township, Monroe County, L. E. Stoffel & Co. have a light pumper in the Maxon sand on the M. Stoffel farm. In the SW of Section 35, Perry Township, S. C. Hamilton and others have a duster in the Big Injun sand on the M. W. Eickelberry farm.

In Section 31, Berea Township, Athens County, Henry J. Smith & Co. have completed No. 7 on the Charles C. Curtis farm. If it is a duster in the first Cow Run sand. In Lee and Athens Townships, the Logan Gas Co. and Irwin & Slack are drilling tests on the W. E. Baughman and James Nickerson farm. In Sutton Township, Meigs County, C. D. Sloan & Co.'s Nos. 2 and 3 on the J. E. Stobert farm are dusters. In Salisbury Township, Meigs County, the Big Six Oil & Gas Co. is drilling on the Walter Carmen farm. In Olive Township, the Wehrle Co. is drilling on the F. C. Andrews farm.

In Grandview Township, Washington County, the Pure Oil Co.'s No. 10 on the William Lee, Sr., farm is a 5-bbl. pumper in the Salt sand. In Newport Township, Perry Smith and others have a rig up on the John Butler farm. In Section 6, Ludlow Township, Homer Newhart and others have a light pumper in the Berea grit at a second test on the C. F. Payne farm.

In the deep sand territory in the NW of Section 6, Jackson Township, Muskingum County, the Hope Construction & Refining Co. has drilled through the Clinton sand No. 3 on the Zonetta W. Brown farm. It flowed 45 bbls. the first 24 hours. In Section 9, Perry Township, Licking County, the same company has completed a test on the Adam Rector farm. It produced 10 bbls. the first 24 hours.

In the Fisher Pool, Lot 84, Athens Township, Athens County, Irwin & Slack have a duster in the Berea grit on the James Nickelson farm. In the NW of Section 11, Sutton Township, Meigs County, C. D. Sloan & Co. have completed No. 7 on the A. E. Carahan farm. It is also dry in the Berea grit.

WEST VIRGINIA

In Duval district, Lincoln County, the United Fuel Gas Co. has completed in the Big Injun sand No. 2,559 and No. 2,563 on the Horse Creek Land & Mining Co.'s tract. Both are gassers in the Bng Injun sand. In Jefferson district, Hobbs Brothers have a gasser on the H. P. Lovejoy farm. In the same district, Earl Cameron's No. 3 on the Golden Stone farm is a gasser. In Union district, the United Fuel Gas Co.'s No. 1,921 is a gasser in the Berea grit, on the G. W. Oxley farm.

In Grant district, Ritchie County, the Carnegie Natural Gas Co.'s test on the Margaret Starkey farm is a gasser in the Big Injun sand. In Murphy district, Pope Brothers have a gasser in the Big Injun sand at No. 4 S. Wilson farm. In Clay district, Maxwell & Co. have a gasser on the W. S. Haymond farm. In the same district the Hope Natural Gas Co.'s test on the Ira Ayers farm is a gasser.

In DeKalb district, Gilmer County, the Hope Construction & Refining Co. has completed a very light gas well in the Big Injun sand on the Cora E. Ware farm. In Geary district, Roane County, the South Penn Oil Co. has completed in the Big Injun sand Nos. 87 and 99 on the O. D. Stockly farm. They are good for 15 and 10 bbls., respectively.

Harrison County

In Sardis district, Harrison County, J. W. Johnson & Son have completed in the Gordon sand a test on the D. T. Baile farm. It is a light gasser with a small showing of oil. In Magnolia Township, Wetzel County, the Silver Hill Oil Co. has completed a test on the Samuel Frankhouse farm. It is a duster in the Gordon sand.

By steadily increasing its production since given a shot, the South Penn Oil Co.'s test on the C. S. McCarty farm, located in Ravenwood district, offers prospects for an extension to the development in Roane County. Leasing in that part of Jackson County has been quite active for more than a month. Up to this time the South Penn Oil Co. and the Heck Oil Co. have done nearly all of the work in that section. The South Penn Oil Co. is drilling a second test on the C. S. McCarty farm. The Heck Oil Co. is drilling on the C. D. Warren farm and has a rig completed for a second test on the O. J. Brown & Co. farm. The oil in this development is found in the Berea grit, a formation that has commendable staying qualities.

Kanawha County

On Birch Branch of Elk River, Big Sandy district, Kanawha County, 700 feet east of its test on the King Land Co.'s tract, the United Fuel Gas Co. has completed a second test good for 500,000 feet in the Salt sand. In the same district, the same company has a rig completed on the Queen Land Co.'s tract. On Leatherwood Creek the same company has a rig up on the King Land Co.'s tract. On the same stream the same company has a rig up on the O. J. Morrison farm. The United Carbon Co. has a rig up on the Blue Creek L. & C. property.

In Jefferson district, Pleasants County, the Southern Oil Co. has completed a test on the Barnsdall farm. It is a light gasser. On Laurel Creek, Sherman district, Calhoun County, W. H. Bickel's test on the Granville Burrows farm is dry in the Big Injun sand. On the Little Kanawha River, Center district, L. P. Bickel's test on the Minnie Hamilton farm is a gasser good for 500,000 feet.

Wayne County

On Patrick Creek, Butler district, Wayne County, 1½ miles southeast of the Chartiers Oil Co.'s test on the Oliver Viers farm, the same company has completed a test on the Thomas Saunders farm. It is dry in the Berea grit and all upper formations. It has been abandoned. On the west fork of Twelve Pole Creek, same district, the same company has completed a light gasser in the Berea grit on the William Jackson farm.

In Geary district, Roane County, the United Carbon Co.'s test on the Garoline Harold farm is a gasser in the Salt sand. In Ravenwood district, Jackson County, the Heck Oil Co. completed in the Berea grit a test on the O. J. Brown farm. It is a very light pumper.

Calhoun County

In Sheridan district, Calhoun County, M. F. Crowley's second test on the John Dawson farm is a gasser in the Berea grit. In the Center district, Godfrey L. Cabot completed a Berea grit gasser on the Leota Taylor farm. In Sheridan district, C. B. Lewis & Co.'s second test on the Charles W. Harris farm is a gasser in the Big Injun sand.

In Central district, Doddridge County, Frank Finley has completed a test on the John Williamson farm. It is a duster in the Big Injun sand. In Big Sandy district, Kanawha County, the United Fuel Gas Co. has a Maxon sand gasser on the O. Derrick heirs' farm.

Shooting Made it Produce

Now and again shooting what looks to be a dry hole turns it into a producer. H. H. Chogwill & Co. have just had such an experience at No. 5 on the J. L. McCullough farm. When it was drilled into the sand two weeks ago it showed for a duster and later when they started to pull the casing to abandon the hole it showed a little oil and they decided to give it a shot. The shot consisted of 80 quarts and it is now making 8 bbls. a day.

In Grant district, Pleasants County, F. E. Russell and others have started to drill on the H. S. Russell farm. In the same district and county, Carter & Rinehart have started to drill a second test on Readis Reynolds farm.

Nearing Completion

In Hackers Creek district, Lewis County, the McCall Drilling Co. is down 3,000 feet on the I. M. Bergerhoff farm. In Coal district, Harrison County, the Washington Gas Co. has drilled to a depth of 2,370 feet its test on the E. D. Fitro farm and shut down. In Coal district, the Clarksburg Light & Heat Co. has a rig up on the Alice J. Reynolds farm. The location for another test on the same farm has been made and the rig completed for a test on the C. B. Stout farm. In Union district, the Reserve Gas Co. is due in the sand at a second test on the Mary Bartlett farm. In Clark district, Nathan Goff has started to drill on his own farm. In Clay district, Monongalia County, the Swastika Oil Co. is due in the Gordon sand on the Titus Lemley farm. In McElroy district, Tyler County, the South Penn Oil Co. is due in the sand at test on the S. P. and L. J. Lemasters and Joshua Swiger farms. In the same district, the Hope Natural Gas Co. has started to drill on the M. V. B. George farm. In Ellsworth district, J. H. Pentz is due in the sand on the J. A. and Glady Smith farm.

Drilling Tests

In Jefferson district, Lincoln County, the United Fuel Gas Co. is rigging up on the Gilbert Adkins farm. In the same district, the Harvard Gas Co. has started to drill on the J. H. Moore farm. In McComas district, Cabell County, the Empire State Oil & Gas Co. is rigging up on the J. W. Savage farm. In Grant district, the Harshbarger Oil & Gas Co. has a rig up on the C.&O. Railroad property. In Spencer district, Roane County, the Federal Oil Co. is rigging up on the L. C. Vandall. In the same district, the Hope Natural Gas Co. is building a rig on the W. T. Craig farm. In McClellan district, Doddridge County, Godfrey L. Cabot has started to drill on the Ezra G. Smith farm. In Center district, Calhoun County, the Hope Natural Gas Co. has started to drill on the Alice S. Bennett farm. In Lee district, F. F. McIntosh & Co. have started to drill on the J. M. Morgan heirs' farm. In Geary dis-

(Continued on Page 118)

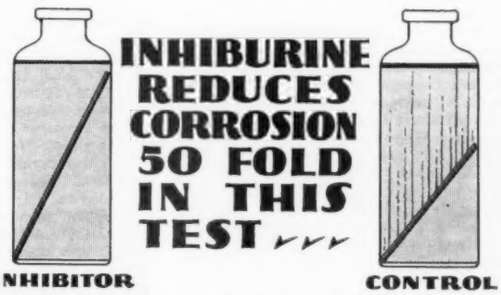
ENAMEL

Now has a "second line" of defense• a new Inhibitor• "INHIBURINE"• that KILLS underground FIRE•••

For more than 25 years Biturine Enamel has been known as the most highly developed bituminous pipe line coating. In Biturine Enamel alone are to be found together every requisite of the ideal pipe coating. Coal tar pitch and native lake asphalt skillfully blended with the correct proportion of other tried and tested ingredients for greatest resistance to corrosion, greatest ductility, and greatest tensile strength. An unusually adhesive primer that lastingly bonds metal and coating as one. Now, after years of patient research and experimentation Biturine Enamel is further fortified in its relentless battle with corrosion—through the addition of an entirely new inhibitor, "Inhiburine."

Unlike any other inhibitor previously used in protective coatings and paints Inhiburine is insoluble in water, yet soluble in bitumens. Incorporated in the priming coat, Inhiburine does not change in any way the effectiveness of the coating itself, but acts as a second line of chemical defense to the first line mechanical coating defense against corrosion. Being soluble in bitumens an even distribution throughout the coating film is obtained with the use of Inhiburine, without the necessity of adding water to the coating.

All coating films are porous to some extent and sooner or later allow the entrance of small quantities of water when exposed to moisture. Before this corrosive water can attack the metal it comes in contact with Inhiburine which immediately becomes water soluble by combination with the corrosive liquor and immediately starts to function in its most effective form. The extraordinarily inhibitive power of Inhiburine is demonstrated in the tests shown below.



The drawings above are taken from an actual demonstration which clearly illustrates Inhiburine's remarkable resistance to corrosion. Into each bottle containing an 18% solution of muriatic acid was placed a bare steel bar. In addition, the bottle on the left contained Inhiburine. The bars, after being immersed in the liquids for 30 days, showed the following results:

Sample	Loss in Weight
Control	57.00%
Inhibitor	1.17%

There can be no question as to the inhibitive power of Inhiburine from this test as neither bar was protected with any kind of coating.

& COMPANY

Division
General Paint Corporation
Factories: SAN FRANCISCO and TULSA

LOS ANGELES HOUSTON PORTLAND SEATTLE

EQUIPMENT AND SUPPLIES

WHITE STAR AWARDS REFINERY CONTRACT

Arthur G. McKee & Co., engineers and contractors of Cleveland, Ohio, have been retained by the White Star Refining Co. of Detroit, Mich., as engineers in the design and supervision of its 6,000-bbl. refinery now under construction at Trenton, near Detroit, Mich.

The equipment will consist of two 3,000-bbl. pipe still distillation units for topping the crude, the bottoms being run to the Dubbs units where final processing will be done. These two Dubbs units will be installed and they are designed so that either non-residuum or flashing runs can be carried on. If nonresiduum runs are made the maximum amount of gasoline will be obtained, but in some instances the market for surplus coke may not be good and fuel oil might offer a better price. In this case the flashing operation will be carried on making a saleable fuel oil from the bottoms. The coke from the Dubbs units will be used as a fuel in the boiler plant and will be fired by unit pulverizers. This operation is being successfully carried on in several refineries today.

BUTLER OFFICERS RE-ELECTED

All the officers of the Butler Manufacturing Co. of Kansas City, Mo., and Minneapolis, Minn., were re-elected for this year at the annual meeting of the directors. E. E. Norquist is president and general manager. The others are: Charles R. Butler, chairman of the board; William A. Knapp, vice president; Roy S. Kemp, vice president and credit manager; F. A. Rufi, secretary; Oscar D. Nelson, treasurer; Victor C. Norquist, plant engineer; John G. Fahlstrom, Kansas City plant superintendent; R. G. Waring, assistant treasurer; William C. Glover, manager Glover sales division; H. L. Alleman, assistant manager Glover sales division; G. C. Speakman, assistant manager Glover sales division; C. C. Crouch, vice president and manager Minneapolis office; John Nelson, Minneapolis plant superintendent; H. B. Baillie, assistant treasurer; E. L. Snyder, Minneapolis plant assistant superintendent. The old directors were re-elected by the stockholders: Charles R. Butler, E. E. Norquist, C. C. Crouch, William A. Knapp, Roy . Kemp, F. A. Rufi, Oscar D. Nelson, and William C. Glover.

EMSCO HAS USEFUL CATALOG

A complete set of its bulletins, each one provided with a special index tab, and all assembled in a convenient folder containing room for additional bulletins, has been prepared by the Emsco Derrick & Equipment Co. The device enables users of oil-field equipment to keep their catalogs of this company up to date.

OFFICERS FOR YEAR ELECTED

At a meeting of the board of directors of the Bethlehem Foundry & Machine Co., held January 22 in Bethlehem, Pa., the following officers were elected for the ensuing year: Chairman of the board, W. A. Wilbur; president, J. George Lehman; first vice president, Robert E. Wilbur; treasurer, G. Ernest Finck; secretary, I. E. Kraude.

JOINS FORT PITT COMPANY

William J. Corbett has resigned as secretary-manager of the Steel Founders' Society of America to become assistant to the president of the Fort Pitt Steel Casting Co., McKeesport, Pa. This company specializes in the manufacture of high grade carbon and alloy steel castings by the electric furnace process.

IDECO CLUB HOLDS ELECTION

At the annual election of the Ideco Club, employes' organization of the International Derrick & Equipment Co., Columbus, Ohio, the following officers were elected: J. L. Hamilton, president; W. B. Tobin, vice president Pacific Coast district; L. L. Powell, vice president Mid-Continent district; Clifford Athy, vice president representing Ohio; C. E. Firestone, Sr., secretary; J. T. Dunlap, assistant secretary; C. G. Runkle, treasurer, and G. P. Dysart, assistant treasurer.

LUMBER COMPANY MAKES A CHANGE IN ITS NAME

The McGraw-Bearly Lumber Co. (derrick division), Tulsa, has changed its name to Monarch Derrick Co. B. E. Sanders, of the Coleman-Sanders Co., rig contractors, has been made manager of the Monarch Derrick Co., to succeed E. L. Whitney, who resigned. The offices of the Coleman-Sanders Co. and the Monarch Derrick Co. will be consolidated in the Exchange National Bank Building.

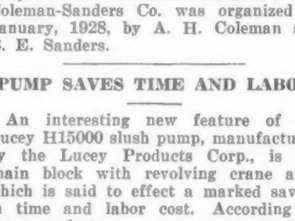
The McGraw-Bearly Lumber Co. will continue operation of its lumber business in Oklahoma City and other points in that vicinity. F. D. Bearly of Oklahoma City is president of both the lumber company and the Monarch Derrick Co. The Coleman-Sanders Co. was organized in January, 1928, by A. H. Coleman and B. E. Sanders.

PUMP SAVES TIME AND LABOR

An interesting new feature of the Lucey H15000 slush pump, manufactured by the Lucey Products Corp., is the chain block with revolving crane arm, which is said to effect a marked saving in time and labor cost. According to the manufacturer, one man can remove and reset the valve pot covers, back cylinders heads or the liners. The pump is mounted on steel H-beams, the ends of which are turned up so that the pump can be skidded easily. Added strength is provided in the tie rods, which materially relieve the cradle of strains. The pump is reported to give exceptional power and volume with low upkeep.

NEW CHAIN PIPE VISE HAS TWO ADVANTAGES

The Vulcan Superior vise recently placed on the market by J. H. Williams & Co., Buffalo, N. Y., offers two advan-



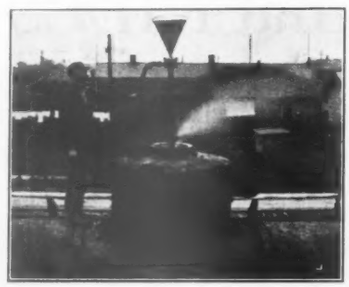
tages. First, the handle is on top, where it is easy to operate. Second, it has reversible jaws. When the teeth first used become worn, the user unscrews the bolts and turns the jaws over. In addition, the manufacturers say each vise takes pipe one-half larger than other chain pipe vises of similar size.

The vise is made wholly from tough wrought steel, with drop-forged base, jaws, handle and chain-arm. The chains are of the same quality as that of the Vulcan chain pipe tongs. Vulcan Superior vises are chrome-plated and are made in two sizes, for one-eighth-inch to 4½-inch pipe.

MUCH TIME SAVED BY LURRY TANK CLEANER

The Lurry tank car cleaner, made by the Wallace Engineering Corp., New Orleans, La., is a duplex mixing and spraying device which denatures and dissolves semioxidized or dried coatings from the interior of tanks by injecting a balanced mixture of steam, induced air and a solvent, forming a combination designed to produce a maximum penetrating and scrubbing effect on all parts of the interior surface to be cleaned.

The equipment, for which a patent is



pending, is made in three parts, the cleaner proper, the hopper and the interchangeable dome cover. Two threaded needle valves control the visible fluid supply and provide for a solvent range from a slow drip to a three-eighths-inch stream. The steam nozzle allows for a three-fourth-inch flow of steam. The air supply is through nozzles with ratio graduated to that of the steam and it is drawn into the steam by just sufficient induction to create proper interior circulation. The air control is the basic feature of the device and its operation is positive. The hopper is simply an open container of sufficient size to admit the solvent or water or both. It is fitted into the head of the cleaner, but is detachable.

In no case, according to the manufacturers, should the total cleaning time for a tank car be more than an hour and a half, even under the worst conditions found in fuel oil tanks.

TRADE LITERATURE RECEIVED

The Trackson Co., Milwaukee, Wis., is sending out a circular describing the new Trackson bulldozer for backfilling, leveling and spreading.

"Autoclaves and Jacketed Vessels" is the title of a bulletin prepared by the A. O. Smith Corp., of Milwaukee, Wis. According to the company every Smith-welded vessel is subjected to tests more severe than the operating condition for which it is built.

A bulletin being mailed by the General Electric Co., Schenectady, N. Y., describes and illustrates G-E motors for oil pipe line pumping.

The P. H. & F. M. Roots Co., Connersville, Ind., has issued a 16-page bulletin on high-pressure type rotary gas pumps. It gives tabulated data on pressures, capacities and horsepowers, along with other useful information.

A circular describing the Trackson industrial crane is being mailed by the Trackson Co., Milwaukee, Wis.

"Cleaning Oil Heaters in the Oil Field," is the subject of an interesting article in the current number of Oakite News Service, published by Oakite Products, Inc., New York.

TWO PYRENE APPOINTMENTS

C. M. Bunnell has been made general sales manager and J. P. Maloney assistant general sales manager of the Pyrene Manufacturing Co., Newark, N. J.

BONNEY ARROW RECOGNIZED

As a result of the enterprise of the Bonney Forge & Tools Works of Allentown, Pa., in placing a large airport identification arrow on the roof of the Bonney buildings, Allentown has been listed officially for airport identification on aviation maps by the Daniel Guggenheim Fund for the Promotion of Aeronautics. A certificate of appreciation bearing the signatures of Harry F. Guggenheim and Charles A. Lindbergh of the Guggenheim Fund has been presented to the Bonney company.

TRAILER DESIGNED FOR OIL FIELD CONDITIONS

Springfield oil field trailers are manufactured by the Springfield Wagon & Trailer Co., Springfield, Mo., in standard sizes 1½, 2 and 3 tons. Construction details in all sizes are virtually the same. The bracing used to tie the pedestal together tends to neutralize the wear. Accessible nuts are provided on all braces for taking up slack when it first appears. Wood is used generally, as being the most resilient. Radius rods obtain direct pull. All wood members are shouldered, which gives them greater solidity. The rear-end spring being boxed with rubber bushing allows free movement, with minimum wear. Clamping collars on the pedestal permit exact length adjustment between bolsters. Forward and backward thrust is cushioned by a coil spring.

BUSINESS NOTES

F. C. Eibell has been made manager of the advertising department of the Worthington Pump & Machine Co., Harrison, N. J. Mr. Eibell was connected with the McGraw-Hill Book Co., New York, for several years and with the Yale & Towne Manufacturing Co., Stamford, Conn.

The Brown-Strauss Corp., Kansas City, Mo., has been formed by a merger of the Acme Pipe & Metal Co., Central Pipe & Supply Co., and A-B Iron & Metal Co. All the officers of the old concerns remain with the new corporation.

Edgar H. Bristol, president of the Foxboro Co., Foxboro, Mass., sailed from New York January 31 for an extensive tour through South America.

J. Spotts McDowell has been appointed director of research for Harbison-Walker Refractories Co., Pittsburgh, Pa., with which he has been associated for about 20 years.

The Kewanee Boiler Corp., Kewanee, Ill., has moved its Chicago office to 185 South Western Avenue.

R. M. Dinges, of the Continental Supply Co., and J. A. Mussler, of the Youngstown Sheet & Tube Co., were to have left early this month for a tour of South American oil fields in the interests of their companies. Correspondence sent in care of the American consul in Maracaibo, Venezuela, will reach them.

ABSORBED BY UNION CARBIDE

Union Carbide & Carbon Corp., New York, has taken over the business of the Colorado Compressed Gas Corp., Denver, Colo. Union now has 35 subsidiaries. The Colorado Compressed Gas Corp. has several subsidiaries, including oxygen and acetylene welding and cutting equipment plants. Union Carbide & Carbon manufactures calcium, carbide, gas-producing materials and chemicals.

OPENS OFFICES IN TULSA

The Standard Steel Works, of Kansas City, Mo., has opened offices in the Hunt Building, Tulsa, with Earl Dunigan in charge.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

FINDING SAND'S OIL CONTENT

We have some very light sands that we are testing, and we are having trouble in determining their oil content from core samples. Can you tell us the best methods of studying core samples of the sands to determine their oil content? What are the most recent developments in distillation methods of testing the oil and water contents of core samples of oil sands?—F. M. S.

It is extremely doubtful if core samples of oil sands can be relied upon to indicate the true degree of their saturation with oil. Oil may be washed from the sand in coring or conversely the sand may be saturated with oil far beyond its true underground content during the coring operation.

If water were not present in the core sample, the problem of determining its saturation with oil would be comparatively simple. Knowing the gravity of the oil and the weight of the sample, it is only necessary to determine the volume of the sample and the loss of weight when the sample is thoroughly dried after leaching it in a good solvent. The loss in weight can then be calculated to volume of oil and expressed as a percentage volume of the sand.

The volume of the sand sample can be determined by water displacement after applying a thin film of paraffin or other coating material outside of the lump of sand. The paraffin can be removed later by the solvent and the sample then thoroughly leached. Breaking the sample down into small pieces, taking care not to lose any of it, will facilitate the leaching.

The same solvents are not best suited to all oils, and it is advisable to experiment with such well-known solvents as benzol, casinghead gasoline, petroleum ether, carbon bisulphide, carbon-tetrachloride, chloroform, ethel ether, alcohol, naphtha and acetone. Discretion should be used in the choice of solvents to subject to distillation.

The presence of water in nearly all core samples of oil sands complicates the problem and makes it necessary to resort to distillation or other methods of separating the oil from the water. This can be done by running a separate distillation test on a fresh sample of oil sand to determine the amount of water present. In this work as large a sand sample as can be conveniently weighed and used in the distillation flask should be used. The sand can be placed directly in the distillation flask and heated, or it can be leached first and then both the filtrate and the leached sand subjected separately to the distillation test, the object being to measure the total water that is driven off and condensed.

The method of determining the quantity of water present by the distillation test is described fully as method 300.12 on page 75 of United States Bureau of Mines Technical Paper 323-B entitled "United States Government Master Specification for Lubricants and Liquid Fuels and Methods for Sampling and Testing."

It should be understood that, at best, the results of such work upon oil sands are mere approximations subject to error from the time the core drill penetrates the oil sand to the time that the oil and water tests are completed. In such work it is necessary to develop a sufficiently good technique to reduce the errors to a minimum. A man should specialize to become proficient. Work of this kind has been extensively pursued by the United States Geological Survey, Washington, D. C., and, since it is a highly specialized branch of geophysics, you are advised to communicate with the Geological Survey for further information.

SOLUBILITY OF GAS IN OILS

From an article by R. Van A Mills entitled "Dangers of Water Flooding Explained," which was published in The Oil and Gas Journal of August 16, 1928, and from the results of experiments that Mr. Mills performed for the United States Bureau of Mines some years ago, I understand that the water drive method of recovering oil from sands is not apt to be successful with heavy viscous oils on account of the fact that the water will by-pass the oil without driving it ahead of it or with it.

Can you tell me if in gas drives or in repressuring operations the gas is apt to by-pass and leave behind it in the sand a heavy viscous oil, say an oil of 16 degrees A.P.I. gravity and a Saybolt Universal viscosity (at 70 degrees Fahrenheit) of 500 seconds, very much as the water would by-pass the oil in a water drive?

Can you refer me to any publications upon the relative solubility of gas in oils of different gravity, say in oils of 30 degrees A.P.I. and in oils of 15 or 16 degrees A.P.I.?—I. G. D.

Gas and water behave quite differently in their propulsion of oil through sands. It is true that the water-drive method does not work satisfactorily with heavy viscous oil for the reasons that you have quoted. Heavy viscous oils require more work to propel them through sands than do the lighter oils of lower viscosity, but the Bureau of Mines experiments to which you refer indicate that gas is more readily entangled with and held in or with the heavy viscous oils than in the lighter oils of lower viscosity.

This does not mean that gas is more soluble in the heavy oils than in the lighter oils because the reverse is generally true. It refers merely to the mechanical behavior of expanding gas that is propelling oil through a sand. So far as the propulsion of different oils through sands by the force of expanding gas is concerned, the available evidence indicates that heavy viscous oils are propelled about as effectively by expanding gas as the lighter oils of low viscosity. This subject has been discussed briefly in the following publications:

"Experimental Studies of Subsurface Relationships in Oil and Gas Fields," by R. Van A. Mills, Economic Geology, vol. 15, 1920.

"Water Control Problems Analyzed," by R. Van A. Mills, The Oil and Gas Journal, September 20, 1928.

"Discussions of Oil Recovery Investigations," by J. O. Lewis, presented before the Tulsa meetings of the Petroleum division of the American Institute of Mining and Metallurgical Engineers, October 18-19, 1928, and published in The Oil and Gas Journal of November 1, and December 20, 1928.

A serious economic problem enters into repressuring oils of low viscosity. Under the present market conditions for crude oil it is doubtful if it would pay to repressure for the recovery of cheap low gravity oil. This phase of the problem should be given most thorough consideration.

The solubility of different types of natural gas in different kinds of crude oil probably plays an important part in repressuring operations, but data upon these solubility factors and their relations to the results of repressuring are extremely meager. For information as to the solubility of gas in oil and its effect upon repressuring operations you should refer to the following publications:

"Methods for Increasing the Recovery from Oil Sands," by J. O. Lewis, United States Bureau of Mines Bulletin 148, 1917.

"Effect of Dissolved Gas Upon the Viscosity and Surface Tension of Crude Oil," by C. E. Beecher and I. P. Parkhurst. Petroleum Development and Technology in 1926, American Institute of Mining and Metallurgical Engineers, New York.

"Solubility and Effects of Natural Gas and Air in Crude Oils," by D. B. Dow and L. P. Calkin, United States Bureau of Mines Reports of Investigations, Serial No. 2,732, 1926.

"Oil Recovery Investigations of the Petroleum Experiment Station of the United States Bureau of Mines." Technical Publication No. 144, American Institute of Mining and Metallurgical Engineers, New York, 1928.

"Relative Propulsive Efficiencies of Air and Natural Gas in Pressure Drive Operations," by Harry H. Power, Technical Publication No. 148, American Institute of Mining and Metallurgical Engineers, New York, 1928.

"Volumetric and A.P.I. Gravity Changes Due to the Solution of Gas in Crude Oils," by R. Van A. Mills and R. E. Heithecker, United States Bureau of Mines Reports of Investigations, Serial No. 2,893, 1928.

PAYING THE DRILLER

Please tell me whether it is a custom to pay drillers when they are not working because of waiting for supplies or for adjustment of company business. If it is customary to pay them, do they receive full time or only part time? What is the general wage for drillers in wildcat fields? Can you recommend any one drilling contractor that you know is honest, knows his business and is a good, sober contractor?—L. W. G.

When drillers employed on a well are obliged to suspend work for short periods through no fault of their own it is customary to pay them in full for the time lost, although conditions alter cases. If the well on which work is suspended is in a remote district, it is much more likely that the drillers will be paid full time than it would be if the well were near some large town to which the idle drillers had ready access. If there is an extended shutdown—say a week or more—during which the owners are debating further drilling of the well or some such question, it is not customary to pay the drillers. Practice in this matter varies little in the different oil fields of the country. Although no figures are at hand, it probably is safe to say that the average wages of drillers in the wildcat fields is about $12 for a day of 12 hours.

For obvious reasons this department cannot single out any one drilling contractor for recommendation. It can say without hesitancy, however, that most drilling contractors are of the kind you are seeking—honest, know their business and are sober.

USE OF THE PITOT TUBE

A gas well producing through 5 3/16-inch casing with a collar at the top of the casing shows 167,000 cubic feet by open-flot Pitot tube test. The closed-in pressure of the well is 645 pounds gauge. Does the pressure of the collar at the top of the casing make any difference in the correct Pitot tube measurement and calculation of the open flow volume?—A. L. B.

Under instructions for the use of the Pitot tube Lichty says: "In making a test the following conditions should be observed: There should be at least a 10-foot length of casing free from fittings, at the mouth of the well, or where the test is made. The test should not be made in any fitting but in the end of the 10-foot joint of pipe mentioned above. At least two hours before the test the head on the well should be blown off."

It is not possible to say just how much difference the presence of the collar will make, but it should not be there and any measurement made in the collar should be repeated in the end of the casing with the collar removed.

USE OF CASINGHEAD GAS

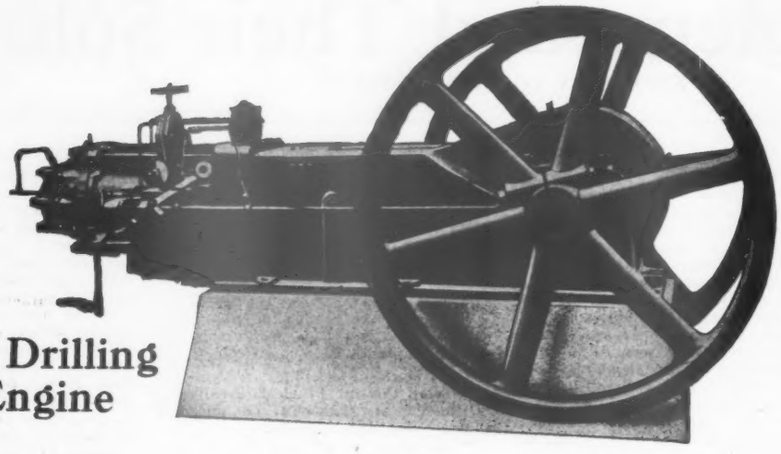
Can you tell me if under the present rulings of the Interior Department it is permissible for an oil company owning and operating oil leases in Osage County, Oklahoma, to use casinghead gas from its oil leases for repressuring oil sands underlying these same leases?—N. S. L.

Provision 12 in Form B, which is the oil mining lease in use in Osage County, Oklahoma (see page 4 of the Departmental Regulations governing the leasing of lands in the Osage Reservation), reads as follows:

"All casinghead gas shall belong to the oil lessee and when used for the manufacture of gasoline shall be metered and be subject to a royalty of 16⅔ per cent based on the market value of the gasoline contents, and all such gas not utilized by the oil lessee on his leased premises or for operating other adjoining leases within the Osage Reservation, shall belong to the gas lessee, subject to the prescribed royalty of 16⅔ per cent."

No subsequent ruling upon this subject has been issued, and it has been considered by the Department of the Interior that oil companies could use casinghead gas for such purposes, provided, however, that the gas lessee covering the same area had no objection thereto. There have been cases where the gas leessees objected, but later withdrew their objections.

FRANKLIN VALVELES



Oil Drilling Engine

New Franklin Valveless oil drilling engine. Type "OF" ample power, simplicity, easy to install. Easy to start. Low fuel cost.

Send for information.

FRANKLIN'S YOUR CHOICE

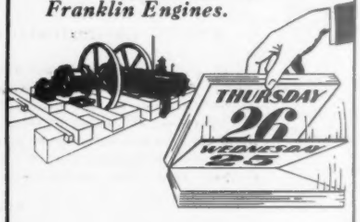
Because it fits your needs. When you load a Franklin Engine on your truck at the station you'll be surprised by the compactness. In fact, the Franklin is so compact you'll kind of wonder whether such a light, handy engine can show all the strength and stamina claimed for the Franklin.

After she's set up and you let 'er shoot, she displays so much power and flexibility you'll get to thinking she must be burning herself out. Then, with several years of work, when you look over your fuel bills and see how low they are; when, upon examination, you find the engine in good condition, even after years of hard work—there is only one thing to conclude—and that is what we have concluded.

The combination of fine material and expert designing reduce the power expense so much that installation with Franklin's is justifiable even though the machinery you have is not worn out.

What We've Been Told

The days go fast—But so do Franklin Engines.



2,690 feet in 26½ days at Keighley, Kansas, with a Franklin Valveless.

The Chinese will soon be alarmed.

"I am convinced I could drill to 6,000 with your engine."

MR. STEINBERGER,
Roosevelt County, New Mexico.

As continuous and unrelenting as a dentist's drill.

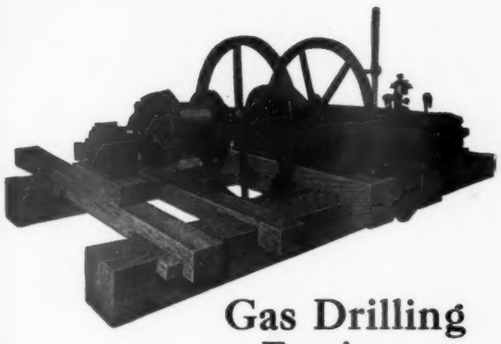
"It has not only saved us money on water and oil, but uses so much less water that in case we are drilling in a field where there is water shortage it saves shutting down the well."

SHAWVER & STUTTER,
By Bell.

OIL WELL SU

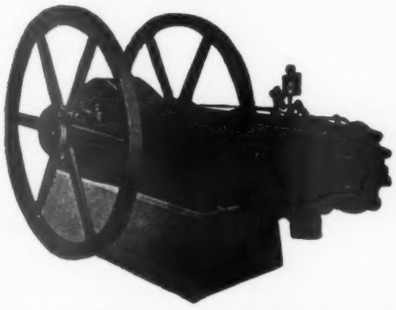
Branches

OIL AND GAS ENGINES



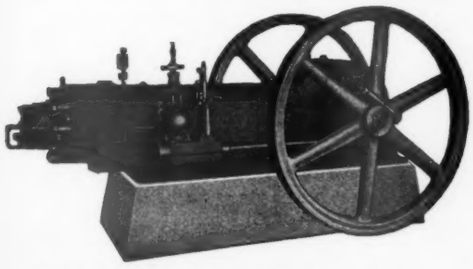
Gas Drilling Engine

This is the Franklin gas drilling engine. 25-30 H.P., 40 H.P., 50 H.P. Each can be mounted on the same block without as much as the change of a bolt. These machines are fast, and especially flexible. They will stand the hardest wear.



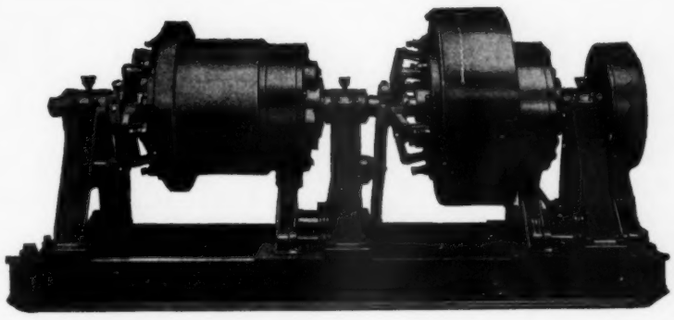
Gas Pumping Engine

Where gas is available, use a Franklin gas pumping engine. It is interchangeable with the Franklin gas drilling engine, using the same block and without changing a single bolt.

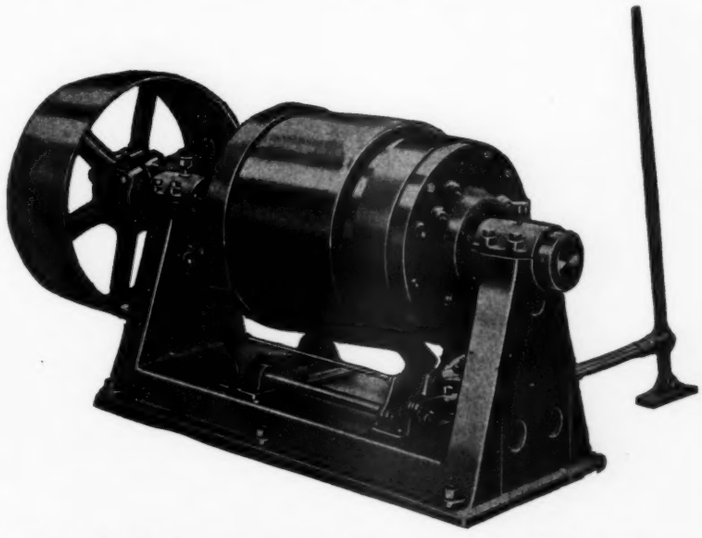


Oil Pumping Engine

Franklin Oil Pumping Engines in 30, 40 and 50 horsepower. Can be equipped with reverse or one way clutch. And don't forget the Franklin Construction keeps out sand and grit and eliminates valve grinding.



The type 2-SD drilling clutch has two speeds in either direction—speed change made when either idling or running at any speed. Has twin discs of steel lined with the best grade of friction lining. Pulley or sprocket wheel, clutch 100% Roller Bearings. In reversing, the shaft is reversed. Spider, levers, brackets, and all underrigging of steel and entire clutch is mounted on a steel base. 2-SD will pull the largest bailer without faltering.



The B.G. Clutch is on the same principle as the 2-SD. It is lighter—has one speed in forward and reverse. Permits use of larger diameter pulley for lower clutch speed.

Let us send you information about Franklin reverse clutches.

FRANKLIN VALVELESS ENGINE COMPANY

Franklin, Pa.

LY COMPANY
Oil Fields

Natural Gas Developments

SAN FRANCISCO LINE CONSTRUCTION BEGUN

NEW YORK, Feb. 9.—Pacific Gas & Electric Co. has started work on its 250-mile natural gas pipe line from Button Willow and Kettleman Hills to San Francisco and the East Bay district. The line is scheduled for completion, with gas delivery, by August 1.

The company is expending $13,000,000 in construction of the line. A 16-inch line will connect Button Willow and Kettleman Hills, 22-inch line as far as Fresno and then 20 inches to Milpitas north of Fresno, where the line will split for east and west sides of San Francisco Bay. An 8,000,000-foot holder is to be built at Oakland and a 10,000,000-foot holder in San Francisco.

A train of 132 cars of pipe from A. O. Smith Corp., Milwaukee, is en route to California. Total pipe for the whole work will reach 40,000 tons. Western Pipe & Steel Co. will fabricate pipe for the northern divisions. Ultimate capacity of the line will be 125,000,000 feet daily, but initial take will be about 50,000,000 feet without boosters under 400 pounds pressure head at the fields.

Pacific Gas & Electric Co. will obtain about $7,000,000 under the present offering of stock to stockholders and in January marketed half of the $10,000,000 authorization of preferred over the counter. These funds go largely to financing the line. Initial gas will come from Milham exploration wells with probable taking from Standard Oil Co. of California wells at Kettleman when complete.

SHORT METER COURSE PLANNED APRIL 16-18

The general committee sponsoring the sixth annual gas meter short course, met at the Engineering Building of the University of Oklahoma and selected April 16, 17 and 18 as the dates for the 1929 course. The committee includes representatives of the University College of Engineering, the Oklahoma Corporation Commission, the Oklahoma Utilities Association and manufacturers of gas measuring appliances. The committee voted to invite the natural gasoline manufacturers of the State to name two representatives for committee membership. F. D. Frank of Bartlesville is chairman of the general committee. Subcommittees will be headed as follows: Program, D. A. Sillers, Dallas; banquet and entertainment, W. H. Carson, Norman; exhibits, C. B. Day, Oklahoma City; publication of proceedings, F. C. Walters, Tulsa; approved methods, C. W. Robbins, Blackwell; publicity, registration and housing, E. F. McKay, Oklahoma City. It is expected last year's registration of 300 will be exceeded.

SHREVEPORT GAS DINNER

SHREVEPORT, La., Feb. 9.—Employes of the Arkansas Natural Gas Corp. and the Southern Cities Distributing Co., its retail subsidiary, were the companies' guests at a "Get Together" dinner in Shreveport, the first since the Arkansas Natural Gas Corp. came into being last March. Earl Hodges, vice president of the Cities Service Corp. of New York, a native of Arkansas where the Arkansas Natural's major activities are located, was the chief speaker, other talks being made by D. W. Harris, vice president of the Arkansas Natural at Shreveport H. B. Davis, director of customer-ownership activities of H. L. Doherty & Co.; E. N. Watkins, new secretary of the Arkansas and local director of the pending customer-owner campaign and Fred Armbruster, vice president of the Southern Cities Distributing Co., being the others.

BUREAU OF STANDARDS TESTING ORIFICE METERS MEASURING GAS

Extensive tests of orifice meters are being conducted by the measurement committee of the natural gas department of the American Gas Association in co-operation with the Department of Commerce.

The first group of tests was made at Cleveland, Ohio, in the fall of 1925, and consisted of a number of tests on three 4-inch orifices in series with the first lift of a covered gas holder.

The second group of tests was made during the summer and fall of 1926 at Buffalo, N. Y., where some of the same equipment was utilized. The object was to determine the effects, upon orifice meter indications, of various kinds and combinations of pipe fittings placed close to an orifice meter flange. Based upon the results of these tests the committee prepared and issues a tentative code on the installation of orifice meters.

The tests made during 1927 may be divided into two groups. The first group was a supplement to the 1926 tests, and included a few check tests on the 1926 work and a short series of "disturbance fitting" tests using a 4 instead of an 8-inch line. The second group of tests designated as "rate of flow tests," was made with orifices in an 8-inch line, ranging in orifice diameters from 1 to 6½ inches.

The rates of gas flow through these orifices, as indicated by the pressure drop across the orifice, ranged from about 10 to over 400 inches of water. From these tests it was possible to determine a series of orifice coefficients for the range of sizes used.

In 1928 tests may be divided into three groups. The first group was a supplement to the 1927 rate of flow tests, being a short series of rate of flow tests with orifices in a 4-inch pipe. The second group of tests was designated as "high pressure" tests. The orifice under test was used in a line in which the pressure ranged from about 100 to about 300 pounds.

The third group of tests may be designated as "flange design" tests, and was made to determine what effect, if any, the interior form of an orifice flange has upon orifice measurements. In one case, the flanges were screwed on to the pipe until the ends of the pipe were flush with the faces of the flanges. In the other set there was a considerable recess within the flanges between the ends of the pipe and the flange faces.

It was convenient to make many of the tests for the first and third groups together. A part of the second group or high pressure tests was made at Hastings, Va., where higher pressures were available than at Buffalo. The results of the 1928 tests are now being carefully studied.

During 1927 and 1928, H. S. Bean, chief of the Gas Measuring Instruments Section of the Bureau of Standards, supervised the tests for the committee. Mr. Bean is now in southern California, where he is carrying on the review of the 1928 data. He has discussed with William Moeller, Jr., chairman of the Natural Gas Bureau; F. A. Hough, chairman of the Committee on Natural Gas Measurement of the Pacific Coast Gas Association, and other members of these organizations, the question of making some further high pressure tests.

Hearty co-operation and support have been promised in the event such tests are made. Because of the favorable conditions found in southern California, plans for making further high pressure tests there are being considered. The desirability of making additional rate of flow tests on a large size line, possibly as large as 16 inches has also been discussed

In the event that the high pressure tests are made, it is probable that the co-operation of the Bureau of Mines will be sought. This bureau is also interested in methods for determining the so-called "open flow" of gas well without resorting to the wasteful practice of "blowing" the well.

Such tests could be made to advantage at the same time the high pressure tests are made, and have been considered in the discussion between Mr. Bean and the committee chairman.

OIL AND GAS MEN FORM STATE COLLEGE BOARDS

Fourteen men prominent in the petroleum and natural gas industries of western Pennsylvania have been appointed to form a petroleum advisory board and a natural gas advisory board for the School of Mines and Metallurgy at the Pennsylvania State College, according to an announcement by Edward Steidle, dean of the School of Mines and Metallurgy.

The boards, which form the first advisory group for education in oil and gas production engineering ever established by any state college or university in the country, according to Dean Steidle, will assist in working out various problems of the School of Mines so that the college may better serve the oil and gas industries of the State. Dr. George H. Ashley, state geologist, Harrisburg, will act as a member of each of the advisory boards.

The following have been appointed to the Natural Gas Board: S. W. Meals, president Carnegie Natural Gas Co., Pittsburgh; G. W. Ratcliffe, president Manufacturers Light & Heat Co., Pittsburgh; F. F. Schauer, general manager Equitable Gas Co., Pittsburgh; J. B. Tonkin, vice president Peoples Natural Gas Co., Pittsburgh; L. W. Young, Jr., president South Penn Oil Co., Pittsburgh.

Members of the Petroleum Board follow: R. J. Alexander, secretary Pennsylvania Grade Crude Oil Association, Oil City; A. E. Booth, president Northwestern Pennsylvania Oil Producers Association, Bradford; W. J. Brundred, president Brundred Oil Co., Oil City; R. M. Haskell, general manager Associated Producers, Bradford; C. N. Pfohl, Kendall Refining Co., Bradford; S. Y. Ramage, president First National Bank, Oil City; R. T. Zook, president Sloan & Zook Co., Bradford; W. T. Piper, president Piper & Lloyd Co., Bradford.

NEW LINE IN INDIANA

The Hope Engineering Co. recently secured a contract from the Indiana Oil & Gas Corp. for the construction of approximately 50 miles of gas line to serve the cities of Vincennes, Washington and Princeton, Ind. The work has been started on this line and completion is expected at an early date.

NEW HELIUM WELL AT DEXTER

WICHITA, Kans., Feb. 9.—Kentucky Co. has added another helium gasser to the Dexter Field of Cowley County, No. 1 Stillman, which is good for about 1,000,000 feet of gas daily.

MIX COKE OVEN GAS AT PHILADELPHIA PLANT

Coke oven gas purchased from the new plant in the northeastern section of Philadelphia is being mixed with gas manufactured in the city's plants and distributed to consumers in Philadelphia, according to Paul Thompson, president of the Philadelphia Gas Works Co.

The coke oven gas is purchased under an ordinance of council granting the gas company permission to contract for coke oven gas.

The coke oven plant is located on a 65-acre tract on the Delaware River. Its erection was started last April by the Koppers Co. and its cost was in the neighborhood of $8,000,000. The plant will be operated by the Philadelphia Coke Co. Coke from the plant, it is understood, will be sold by the operating company chiefly for domestic fuel.

"There is a great advantage in this contract to the people of Philadelphia," Mr. Thompson stated, "as it postpones for a number of years large investments which otherwise would have to be made for additions to the city gas plants, to take care of the increased consumption as the city grows. In other words, the wisdom of council in granting permission for the purchase of gas will be seen in years to come, as the city of Philadelphia will not be required to furnish any money for development of its gas plants until the requirements of the city exceed their capacity and the additional amount of coke oven plant can supply to the Philadelphia Gas Works Co. At present 20 to 25 per cent of the total amount of gas required will be purchased from the coke company. Later, there is a possibility that the capacity of the coke plant may be increased. The value of the city's gas works is in no way impaired by the purchase of this gas."

In 1923 a total of 19,901,229,000 cubic feet of gas was sent out from the Philadelphia Gas Works. Co.

NEW LINE TO NEW ORLEANS

SHREVEPORT, La., Feb. 11.—Contract has been awarded by the Interstate Pipeline Co. for looping 25 miles of its 22-inch line from the Monroe Field to New Orleans, construction to begin immediately. The loop will be in two sections, 5 miles between Wisner and Gilbert, La., and the other 20 miles between Thompson Creek and the Baker Canal just north of Baton Rouge, and will be 22-inch welded, the same as the original line. Construction of the loop is required by the domestic and industrial consumption in New Orleans, to which the line was extended during last year, being added to the demand from Standard Oil Co.'s refinery at Baton Rouge, which crowds the line's original 100,000,000 feet per day capacity too close for comfort.

DIXIE GULF GAS LINE

HOUSTON, Tex., Feb. 9.—Dixie Gulf Gas Co., a subsidiary of the United Gas Co., has started construction of an 8-inch line from the main line at Clinton on Houston Ship Channel to serve the New Haden lime plant on Greens Bayou, one of Houston's industrial centers.

GALVESTON GAS ORDER

GALVESTON, Tex., Feb. 9.—The Texas Cities Gas Co., under the terms of a decree by Special Judge W. S. Hunt of Houston in the city's suit against the company, is required within 50 days from January 21 to furnish natural gas having an average heat content of not less than 900 B.t.u. per cubic foot.

Control of Oil Production Suggested

Senator Waterman, Former Counsel for Federal Oil Board, Thinks Some Competent Superior Authority Needed to Regulate It

By Charles W. Waterman*
United States Senator From Colorado, Formerly Counsel Federal Oil Conservation Board

The United States is producing a billion barrels of petroleum annually, which is approximately 73 per cent of the world's total production. We have in storage more than 700,000,000 bbls. The amount of shut-in production in the United States, Colombia and Venezuela is estimated at 3,000,000 bbls. a day, as against 1,000,000 a year ago. It is even likely that this estimate is far too small.

The overproduction menace, disturbing four years ago when President Coolidge created the Federal Oil Conservation Board, is more pronounced today, and its baleful influence overshadows 1929. During the present year the consumption of gasoline may increase 40,000,000 bbls. over 1928, while lubricating oils and fuel oils will likewise show marked gains.

The Government Oil Board has functioned for four years. It has made an exhaustive inquiry concerning the production, transportation, refining, distribution, use, and consumption of petroleum and its products and the probable available future supply in the United States. This inquiry deals with a great and most essential natural resource, limited in quantity by Nature, which is dwindling from day to day—dwindling because it is being utterly consumed at the rate of more than 1,000,000,000 bbls. per annum and cannot be either reproduced or replenished. With the growth of time this most valuable and necessary resource must inevitably reach the stage of practical exhaustion, at least so far as any general use is concerned.

Ruthless Dissipation

All estimates and opinions concerning existing supply of undiscovered petroleum in the ground and even the amount of oil contained in proven fields must of necessity be colored by conjecture. The fact remains, however, that our supply of petroleum, which in all human probability has reached or nearly reached its peak in production, has been for some years last past and still is being squandered at a riotous rate by the reckless and improvident methods of capture and the ruthless dissipation of the natural gas dissolved in the oil or resident therewith in their natural state and citus beneath the surface.

During the past few years, new oil fields, frequently discovered, of large producing capacity, and their rapid and competitive exploitation have produced a supply of oil far above and beyond the demand of essential use, deluging the market with so great a supply, after satisfying such use, that petroleum has been forced into keen and violent competition with coal in nearly all its area of consumption, with the result that probably one-half of America's oil production is being used to displace the legitimate and equally effective use of coal.

The waste of natural gas, incident to the past and present methods of capturing oil at the surface, is prodigal and extravagant, and is quite reliably estimated to be equivalent in value and effectiveness to a very large percentage of all the petroleum actually subjected to control and ownership.

Ripe for Rigid Economy

In the light of these developments, it can hardly be argued that the time is not ripe for a rigid economy and conservation of this great and useful natural resource.

The Government can save the oil resources of its lands under the delegated power contained in Section 3 of Article 4 of the Constitution, and by the same authority it can so legislate as to prevent drainage of the oil and gas from beneath the surface of its lands by the owners of lands adjacent or nearby.

*In the American Bankers Journal.

The several states can, under their reserved police power, respectively regulate and control the capture of petroleum within their respective territories to any extent which will prevent waste and loss of oil, and also natural gas, and in aid of such purpose may prevent owners of surface from drawing oil in a manner wasteful of the oil and gas beneath the surface of other owners.

Control of Production

Under the third paragraph of Section 10 of Article 1 of the Constitution, the several oil producing states may enter into a compact for the regulation and control of oil and gas production and have uniform laws to that end which, when ratified by the Congress, may accomplish the desired purpose; but the practicability of this method is doubtful in view of the many apparent barriers which beset the way of such a movement.

The question has been raised of late as to the power of the Federal Government to prohibit the exportation of petroleum and its products.

Clause 3, Section 8, of Article 1 of the Constitution provides that:

"The Congress shall have power * * * to regulate commerce with foreign nations, and among the several states, and with the Indian tribes."

In view of the many declarations of the Supreme Court, it is unnecessary to discuss or define "commerce with foreign nations," more than to say that this power extends to every sort of trade and intercourse between the United States, the several states, and the citizens thereof, with foreign nations and their respective subjects.

Senator Charles W. Waterman

This power was in the earliest days of the Republic held to extend to and embrace "navigation" as fully as though the very term itself had been used in the commerce clause.

Exports and Imports

The Congress, then, has power to regulate foreign commerce which embraces both exports and imports.

This power to regulate is complete in itself, has no qualifications, and is expressly delegated by the Constitution to the Congress and is there exclusively vested. This power has no limitations whatever unless they are expressed in the Constitution or necessarily implied from expressions in that instrument, but there are no such limitations in the Constitution either expressed or implied. The authority of Congress over foreign commerce is so complete that no one can be held to have a vested right to carry on such commerce. The power of the Congress to regulate foreign commerce vests in that body the complete authority to prohibit merchandise carried in such commerce from entering the United States.

Exports are as completely within the power of Congress to regulate as imports, because commerce with foreign nations embraces all intercourse with such nations. It is almost universally acknowledged, and has been for more than 100 years, that there may be a commercial embargo as well as a war-time embargo.

Clearly, Congress may, in its discretion, prohibit the exportation of petroleum and its products.

Federal Regulation

Concerning the power of Federal regulation of petroleum and gas production from privately owned lands located within the State, I may say that fundamentally, the solution of this question depends solely upon an interpretation of the Constitution of the United States. The cleavage between the powers delegated to the United States and those reserved to the States respectively in that instrument, in view of the many decisions of the Supreme Court, has become quite clear. The Congress may exercise those powers, and those only, which are expressly delegated and those which may be requisite to the full exercise of the power expressly delegated. The states respectively may exercise all powers not delegated to the Federal Government and not denied to the states.

Without attempting to define precisely the "police power," it may be said that generally it is the power to establish a system of laws tending to promote the health, order, convenience and comfort of the people and to prevent and punish offenses to the public. This power resides in the states respectively, because it is not delegated to the Federal Government and is reserved to the states.

Title to Oil

The right to capture and gain absolute title to oil and gas beneath the surface of the earth is in the owner of the surface, subject to constitutional limitations, if any, and subject also to such restrictions as may be imposed by a lawful exercise of the police power.

With these general legal observations, more specific statement may be advanced relative to the more important branches of the petroleum industry as now conducted and the probable effect of present methods and volume of production and nonessential use upon the future supply of petroleum, general welfare, and national defense.

The intense and persistent activity in prospecting and exploring those portions of the country giving evidence of geological fitness for the presence of oil, during the past 20 years, has resulted in an amazing sequence of disclosures of ma-

(Continued on Page 121)

PETROLEUM DIVISION, A.I.M.E., TO MEET IN NEW YORK FEBRUARY 20-21

A good program has been arranged for the annual meeting of the Petroleum Division of the A.I.M.E., to be held in New York on February 20 and 21, at the Engineering Societies Building, 29 West Thirty-ninth Street.

A. W. Ambrose, manager of production for the Empire Oil & Refining Co., chairman of the Petroleum Division, and other officers have arranged a comprehensive meeting which will cover a diversity of subjects of interest to the oil industry. Included on the program are papers that will present a complete review of world producing areas, both foreign and domestic, written by nationally known authorities.

The Petroleum Engineering, Petroleum Research and Petroleum Economics sessions will have something of specific value in store for all engineers and executives who will find it possible to attend. The general session on Thursday evening will be preceded by a banquet at which two general papers on the crude oil supply and a paper on the developments in refinery engineering will be presented.

The Petroleum Engineering Education session will have two topics for discussion: (1) "Is the Petroleum Industry Overengineered? If So, to What Extent?" and (2) "To What Extent Should the Engineering School Attempt to Train Research Specialists for the Industry?"

A complete program of entertainment has been arranged for the wives of visitors in the way of teas, dinners and tours of the city.

PETROLEUM DIVISION
Wednesday, February 20
9 a. m., Room 502

Petroleum Engineering—E. O. Bennett, chairman.
Mechanics of Sucker Rod Movements—By Fred Wood.
Crooked Holes—By Alex Anderson.
Crooked Holes—By E. H. Griswold.
Analyses of Water of the Salt Creek Field Applied to Underground Problems—By J. Stanley Ross and E. A. Swedenborg.
Core Studies of the Bradford Sand from the Bradford Field, Pennsylvania—By C. R. Fettke.

9 a. m., Room 1501

Petroleum Economics—Campbell Osborn, chairman.
Gasoline Economics and Refinery Operation—By H. J. Struth.
Fuel Oil, the Safety Valve of the Petroleum Industry—By C. J. Deegan.
The Market Action of Oil Securities—By J. Elmer Thomas and M. D. Gould.

2 p. m., Room 502

Petroleum Engineering—C. V. Millikan, chairman.
Factors Controlling Spacing of Wells—By Robert Phelps.
The Effect on Producing Wells of Shutting in Offset Wells—By C. M. Nickerson.
Repressuring at Santa Fe Springs—By A. C. Rubel.
Gas Lift on Heavy Oils in Venezuela—By F. P. Donohue.

2 p. m., Room 1501

Review of Petroleum Production in 1928 (Foreign)—A. R. Denison, chairman.
Mexico—By V. R. Garfias.
Venezuela—By H. J. Wasson.
Colombia—By J. Terry Duce.
Bolivia—By Gilbert P. Moore.

(Continued on Page 102)

MEN KNOWN IN OILDOM

Robert W. McIlvain

Robert W. McIlvain, vice president and director of the Pure Oil Company, might be said to have celebrated his fifteenth Pure Oil birthday last January 1, for on January 1, 1914, he joined the Ohio Cities Gas Company, which in June, 1920, became the Pure Oil Company. Previously he had been president of the Columbus Producing Company, a subsidiary of Ohio Cities, and he had charge of properties in Cabin Creek, W. Va., which he opened and developed. When the Columbus Producing Company was dissolved he became vice president of the major company, in charge of all production.

The year 1917 Mr. McIlvain passed in Oklahoma, organizing and developing his company's newly acquired producing properties in that State. In 1918, Mr. McIlvain returned to the Columbus, Ohio, office of the company, remaining there till the executive offices were removed in 1926 to Chicago, where he has resided since. Mr. McIlvain was president of the Oklahoma Producing & Refining Corporation from 1920 to 1923, when it was absorbed by the Pure Oil Company. In the World War he served as a member of the Advisory Committee on Appalachian production of the National Petroleum War Service Committee, and for two years he has been a member of the Board of Councillors of the American Petroleum Institute. He is president of the Pure company's Venezuelan subsidiary, the Orinoco Oil Company.

Mr. McIlvain is a native of Michigan. After graduating from high school he spent several years on ranches in North Dakota and Montana. Then he went to Cripple Creek, Colo., where he acquired valuable mining experience. In 1908, he entered the oil industry, going to Arkansas and Louisiana, where he learned what there was to know in various jobs from roustabout to manager.

Mr. McIlvan's chief recreation is horses. He is a member of polo clubs in Chicago and Columbus. He was the owner of the racing mare Goldie Todd. In 1905 he married Miss Jennie Belle Ikard, of Henrietta, Tex. Their one son, Robert W. McIlvain, Jr., is a student at Sheffield Scientific School, Yale University.

PERSONAL PARAGRAPHS

E. J. Carlin, of El Paso, Tex., is spending some time in the San Angelo territory.

* * *

John Sheehan, of the Sheehan Pipe Line Company of Tulsa, is in Rochester, Minn.

* * *

C. W. Wood, San Angelo, Tex., operator, was a recent business visitor in Fort Worth.

A. W. Peake, president of the Dixie Oil Company, Shreveport, La., was a Tulsa visitor.

* * *

F. Julius Fohs, consulting geologist of New York, was in Tulsa for a few days last week.

* * *

Earl C. Frates, San Angelo, Tex., independent operator, was a recent visitor in Fort Worth, Tex.

* * *

E. H. Moore, president of the Independent Oil & Gas Company, is on the Pacific Coast for 10 days.

* * *

R. J. Marony has been elected a director of the New York Transit Company, succeeding J. R. Fast.

* * *

A. E. Landsittle, sales manager of the Globe Oil & Refining Company of Tulsa, has returned from Rochester, Minn.

* * *

G. R. Elliott, advertising manager of the Skelly Oil Company, Eldorado, Kans., visited the Tulsa offices last week.

* * *

Ed A. Landreth, president of the Landreth Production Company, Fort Worth, Tex., is in New York City on business.

* * *

R. V. Logan, Logan Map Company, Fort Worth, Tex., is recovering from serious injuries suffered in an automobile accident.

* * *

E. L. Stevens, sales manager of the Wickwire Spencer Steel Company of New York, is making a tour of the Mid-Continent Field.

* * *

F. G. Spencer, president of the Spencer Trailer Company, Augusta, Kans., has returned to his office after several weeks' illness.

* * *

W. H. Dwyer, of the United Iron Works, spent a few days in Tulsa last week, and has returned to his headquarters at Dallas, Tex.

* * *

Mickey O'Connell, of the Roeser & Pendleton interests of Fort Worth, Tex., dropped in on a few of his old friends at Tulsa last week.

* * *

T. C. Towl, of Pittsburgh, Pa., superintendent of the Southwest Pennsylvania Pipe Line Company, was called to New York last week.

* * *

John Watson, in charge of land and lease work at Shawnee in Central Oklahoma for the Sinclair Oil & Gas Company, was in Tulsa last week.

* * *

John W. McGee, of Amarillo, Tex., was in San Antonio for several days recently on business. He has leases in the Somerset Field near there.

* * *

Earl W. Miller, sales manager, American Iron & Machine Works, of Oklahoma City, Okla., is spending a few weeks in Texas calling on the trade.

* * *

Paul J. Rogers and Herman F. Heep, pioneer operators in the old Luling Field and in various wildcat areas since, have opened an office in San Antonio, Tex.

* * *

P. R. Smith, division manager of the Pure Oil Company's Arkansas operations, has returned to his El Dorado headquarters following a visit to Fort Worth, Tex.

* * *

Olin Jones, assistant purchasing agent of the Empire companies at Bartlesville, Okla., has gone to Arizona on a two months' leave of absence to rest and recuperate.

* * *

J. R. Parten, president of the Woodley Petroleum Company, of Shreveport, La., was in New York following the annual meeting of the stockholders and directors at Shreveport.

* * *

William A. Raymond, manager of the Houston Gas & Fuel Company, Houston distributing company, has resigned, effective this month. He has not announced future plans.

* * *

J. W. Rettig, of the Empire Gas & Fuel Company, is now in the San Antonio, Tex., territory. The Empire company has increased its force in that territory since getting a producer in its Gonzales County wildcat.

Ralph E Davis, engineer of Pittsburgh, Pa., was a Tulsa visitor last week. He was accompanied by Jimmy Bahan who is associated with him in the Louisiana-Arkansas territory.

* * *

P. C. Jones, president of the S. M. Jones Sucker Rod Company, of Toledo, Ohio, was in Tulsa a few days last week. Mr. Jones is making a tour of the Mid-Continent territory.

* * *

W. E. Dunlap, assistant production manager and chief geologist, has been appointed production manager for Richfield Oil Company of California, succeeding John McKeon, resigned.

* * *

Andrew W. Golden, retired president of the Tidewater Pipe Company, is in the Bradford, Pa., hospital, suffering from a fractured hip. The injury was caused by a fall on an icy sidewalk.

* * *

James W. Taylor, formerly zone agent of the Gulf Production Company, at the San Antonio, Tex., office is back in San Antonio after some time spent in various oil centers in Louisiana.

* * *

R. C. Grinnell, of the Robert N. Atmore Company of Tulsa, has returned from a month's trip to California, where he visited the factory of the Fluid Packed Pump Company at Los Neitos.

* * *

J. L. Minahan, formerly with the Roxana Petroleum Corporation, now an independent operator, has returned to his home in San Antonio, Tex., after an absence of several months in other fields, notably in Oklahoma.

* * *

Walle Merritt, formerly head of the land department of the Shell Petroleum Corporation, Houston, Tex., has left for Los Angeles, Calif., to assume his new duties as head of the land work for the Shell Oil Company.

* * *

W. A. Williams, president of the Crown Central Petroleum Corporation, Houston, Tex., and J. B. Bowles, technician, are in New York City on company business. Mr. Williams probably will be in the metropolis several weeks.

* * *

Jack S. Hess, chief engineer for the Sinclair Refining Company, Chicago, Ill., in company of J. C. Hertsell and Harry Pelnver, also of the Chicago office, spent several days in Houston, Tex., looking over the company's refinery.

* * *

John M. Lovejoy, of New York, president of the Petroleum Bond & Share Corporation, was a recent business visitor in Tulsa, where he resided for years, while vice president and general manager of the Amerada Petroleum Corporation.

* * *

Dan Jygar has resigned as president of the Ponca City Gas Distributing Company, a subsidiary of Marland company. Mr. Jygar also was manager of the pipe line division of the Marland Pipe Line Company. Harry Moreland, who has been Mr. Jygar's assistant, was appointed to succeed him.

* * *

John McKeon has resigned as vice president of Richfield Oil Company of California. He has been in charge of production for the company. Mr. McKeon plans to resume his activities as an independent operator, and is reported contemplating consolidation of a number of small units into an operating company.

* * *

Joe Zeppa, who resigned as secretary-treasurer of the Arkansas Natural Gas Corporation to become vice president of the MacMillan Petroleum Products Company at Los Angeles, has left Shreveport, La., for his new position. He is succeeded as secretary of the Arkansas Natural Gas Corporation by E. N. Watkins, general auditor.

* * *

C. R. Welch, who has been district land manager for the Shell Petroleum Corporation in northwestern Oklahoma and the Osage country, is moving from Ponca City to Wichita, Kans., and will have charge there. D. C. Robertson, who has been district manager at Wichita for the Shell corporation for four years, is being transferred to Tulsa where he will be connected with the Shell land office.

LOUISIANA-ARKANSAS

(Continued from Page 54)

at 1,200 feet on No. 2 Wright, Section 11-18-4. United Carbon Co. cemented 6-inch at 2,119 feet on No. 3 fee, Section 19-5.

Union Parish—Industrial Gas Co.'s No. 1 Hill, Section 9-20-3e, is drilling at 300 feet with 12-inch cemented at 177 feet. United Carbon Co.'s No. 1 Nichols, Section 6-20-3, cemented 6-inch at 2,041 feet and No. 1 Reed, Section 2-20-3, has rig up.

Richland Parish

Carbon Gas Co. cemented 8-inch at 880 feet on No. 1 W. T. Sartor, Section 16-16-6, and is drilling at 900 feet. Magnolia Petroleum Co.'s No. 2 D. R. Sartor, Section 21-16-6, cemented 6-inch at 2,300 feet and No. 2 J. Sartor, Section 16-16-6, is drilling on a rock at 2,603 feet. Ouachita Natural Gas Co.'s No. 5 Pardue, Section 5-16-6, cemented 6-inch at 2,325 feet.

Webster Parish

Cotton Valley—Cotton Valley Syndicate's No. 19 Hope, Section 24-21-10, tested 2,000,000 feet of gas at 4,561 feet and is arranging to go deeper. Magnolia Petroleum Co. is drilling hard lime at 3,-347 feet on No. 4 Ira Cox, Section 23-21-10, and is in lime at 4,130 feet on No. 1 McCook & Hibbler, Section 22-21-10.

Sarepta and Shongaloo—J. W. Clark has rig up for No. 2 Mayfield, 660 feet north and east SW cor. SE, Section 20-23-9; No. 1 on this lease was drilled by Richardson and others and got a good show of oil at around 2,700 feet. Magnolia Petroleum Co. has location 660 feet east and south NW cor. NE NW, Section 4-22-9, and is drilling No. 3 H. M. Branton, Section 6-22-9, at 2,275 feet; No. 1 Cook, Section 2-22-11, is drilling around 150 feet and No. 1 Sally Doyle, Section 2-22-11, has derrick up; No. 1 Denma, Section 1-22-11, is drilling at 2,390 feet.

ARKANSAS

Johnson County

Arkansas Natural Gas Corp.'s No. 2 Byrum, Section 12-10-24, is drilling at 1,325 feet and No. 1 McPherson, Section 10-10-24, is drilling at 1,600 feet.

Nevada County

Humble Oil & Refining Co. cemented 8⅝-inch at 1,135 feet on No. 5-B Groves, Section 1-14-21, and is drilling sandy lime at 2,939 feet on No. 2 Hain, Section 2-14-21.

Ouachita County

Smackover—Gulf Refining Co.'s No. 3-A Goodwin, Section 5-16-15, is bailing to test 36 feet of broken sand, total depth 2,576 feet. Phillips Petroleum Co.'s No. 20 Joyce, Section 33-15-15, is shut down at 3,230 feet waiting orders. Shell Petroleum Corp. is arranging to deepen No. 1 Williams in Section 34-15-15, completed in June, 1923, flowing 2,-500 bbls. of oil from 2,381 feet. Simms Oil Co.'s No. 1 Hildebrandt, Section 33-15-15, is drilling at 2,728 feet.

Union County

El Dorado—Gulf Refining Co.'s No. 2 Caddy, Section 30-17-14, tested 1,900 feet of salt water from 2,604-11 feet and is drilling at 2,740 feet. Standard Oil Co. has rig up on No. 5 Burns, Section 31-17-15.

Champagnolle—Lion Oil Refining Co.'s No. 5 Rowland, Section 15-17-14, was put on the air and is flowing 3,000 bbls. of salt water, total depth 2,858 feet; No. 5 Union Sawmill, Section 7-17-13, is drilling lime at 4,235 feet. Magnolia Petroleum Co.'s No. 2 Gregory, Section 15-17-14, tested a show of oil and gas at 2,825-28 feet and cemented 5½-inch at 2,825 feet; No. 3 Alice Gregory, in the same section, is coring at 2,763 feet. Ohio Oil Co. has rig up on No. 1 Adams in Section 7-17-13, and cemented 6⅝-inch at 3,035 feet on No. 2 Frazier, Section 6-17-13, total depth 3,045 feet; No. 1 Hamilton in Section 12-17-14, has rig up to drill. Oilwell Corp. made location for No. 1-D Perdue, 300 feet north and 273 feet west SE cor. SW NE, Section 9-17-14. Rovenger Oil Corp.'s No. 2-B Perdue, Section 9-17-14, cemented 12½-inch at 150 feet.

LA.-ARK. WILDCATS

(Continued from Page 54)

Belgrade Lumber Co.'s land in Section 11-11-8, a few miles northwest in Issaquena County. In the latter the Wilcox was topped at 1,625 feet, the Midway at 2,635 feet and the Nacatoch at 3,085 feet, and bailed dry at 3,175 feet. R. E. Davidson has blocked approximately 40,000 acres in Townships 13 and 14, Ranges 3 and 4, in Humphreys County, and has 12½-inch set on a 3,300-foot test in the SE cor. NE Section 24-14-4. Two magnetometer highs have been located on his block, one centering around Sections 29 and 30-14-3, which shows a closure of 600 gammas and the other, with a closure of 500 gammas, centering around Section 24-13-4. Ganzel and others are moving rig to drill a 4,500-foot test on their block in Rankin County, location being in Section 2-4n-1e.

Arkansas Natural Gas Corp. has set 6-inch at 2,852 feet to test a show of about 500,000 feet of gas that came up through 2,500 feet of water in No. 1 Rye, Section 22-15-17, Monroe County. Lion Oil Refining Co. of El Dorado started drilling No. 1 Misterfeldt in Section 2-4-1e, Rankin County, a few miles south of Jackson, and Louisiana-Mississippi Land & Oil Co. are moving rig in to drill No. 1 Pat Case in the NE NE Section 21-8-6, Lincoln County. Amory Petroleum Co. has been reorganized with an entirely new set of officers and Judge G. Gillispie, formerly at the head of its affairs, has bought the company's rotary rig and moved it to Fort Lauderdale, Fla., to drill a series of prospect holes for local people on the strength of gas seeps and recommendations of H. D. Easton of Shreveport.

Wildcat Completions

Only two completions were made in wildcat areas of this division this week. The show at 3,111 feet last week in Arkansas Natural Gas Corp.'s No. 1 Tidwell in Section 29-22-11, Bossier Parish, 9 miles south of Cartersville, failed to materialize and after drilling to 3,462 feet the test was abandoned as a salt water hole. The other was Stiles and others' No. 3 Frazier in Section 27-1n-11, Pulaski County, Arkansas, a few miles east of Little Rock. Last August this well was the source of a short-lived flurry when it was reported standing full of fresh water the first 150 feet being oil, from 10 feet of sand at total depth of 1,005 feet. The oil analyzed 38 gravity; 33 per cent gasoline, 15 per cent kerosene, 19 per cent gas oil. When scouts went to investigate they found it was being made considerable of a "mystery well" and every one promptly lost interest and nothing more was heard from it until the Arkansas Conservation Department permit report came through this week showing that it had been abandoned. Swope and others, whose No. 7-B fee in Section 17-9-1e, Grant Parish, has been carried on the report since last July, also was abandoned. Nothing was ever done with it beyond building the derrick.

A. C. Glassell, who recently took an interest in El Dorado Chief Oil Co.'s No. 1 Baker, Section 26-20-7, Claiborne Parish, to finish it, has started work and is washing to bottom preparatory to deepening. It has been shut down at 2,092 feet for a month and Glassell is to drill it to 3,000 feet. Robeline Oil & Gas Co. is drilling on No. 1 Cassada, Section 7-8-9, Natchitoches Parish, after coring a dry sand at 2,528 feet. Richland Operating Co.'s No. 1 Chapman in Section 19-16-7, a mile east of the nearest well in the Richland Parish gas field, appears to be beyond production as it stands now, testing salt water at 2,495 feet.

NORTH LOUISIANA

Bienville Parish

W. P. Wallas started work February 1 on No. 1 State, Section 16-16-10, set 10-inch at 200 feet and is drilling at 250 feet.

Bossier Parish

Woodmansee and others set 300 feet of 12½-inch on No. 1 Bollinger, Section 9-22-11.

Caddo Parish

D. C. R. Oil Co.'s No. 1 Hunter, Section 17-19-14, is fishing for rotary slip, total depth 930 feet.

Claiborne Parish

Dixie Oil Co. is fishing for drill stem and core barrel, twisted off at 4,939 feet in No. 1 Gilbert, Section 27-21-5, total depth 5,007 feet. A. C. Glassell has resumed work on El Dorado Chief Oil Co.'s No. 1 Baker, Section 26-20-7, and is washing to bottom to go deeper, total depth 2,092 feet.

DeSoto Parish

Benedum & Trees Oil Co. has rig up for No. 1 Mahoney, 1,305 feet north and 1,202 feet west SE cor. Section 22-14-12, and has rig up for No. 1 Nicholson in Section 2-15-14. Carlton Drilling Co. No. 1 Stevens, Section 12-11-16, is drilling at 1,880 feet. Magnolia Petroleum Co. has rig up on No. 3 Fortson, Section 4-12-11. R. O. Roy is drilling No. 1 Sample, Section 1-13-14, at 1,350 feet. Thorn Oil Co.'s No. 1 Burford, Section 22-14-14, is drilling at 2,630 feet. Warren & Carruthers are drilling No. 1 Ramsey, Section 33-13-16, at 2,800 feet.

East Carroll Parish

Palmer Corp.'s No. 1 Michner, Section 8-19-11, is on a rock at 2,655 feet.

Franklin Parish

Davis and others are drilling shale at 1,428 feet on No. 1 Moore, Section 12-11-6.

Grant Parish

Carter & Collins' No. 1 Ball, Section 29-7-1w, set 10-inch surface casing at 140 feet and is drilling.

Monroe District

Ouachita Parish—Phillips and others' No. 1 School fee, Section 16-16-4, is drilling at 3,085 feet.

Natchitoches Parish

Robeline Oil & Gas Co.'s No. 1 Cassada, Section 7-8-9, cored dry sand at 2,528 feet.

Richland Parish

Richland Operating Co.'s No. 1 Chapman, Section 19-16-7, tested salt water at 2,495 feet and shut down for orders.

Sabine Parish

R. L. Gay is drilling No. 2 Bowman-Hicks, Section 14-7-14, at 1,750 feet.

ARKANSAS

Ashley County

J. G. Marcum and others are drilling No. 1 DeYampert, Section 5-19-4, at 2,920 feet. The Texas Company's No. 1 Keifer, Section 11-18-4, is drilling shale and rock at 2,572 feet.

Calhoun County

Joe Hurley and others' No. 1 Arkansas Timber Co., Section 29-16-12, is drilling 6-inch plug, total depth 2,314 feet.

Drew County

Ohio Oil Co. set 12½-inch surface string at 350 feet on No. 1 Jerome, Section 13-15-4.

Logan County

Arkansas Natural Gas Corp. is underreaming 7-inch casing at 3,300 feet on No. 1 Parks, Section 26-8-24, total depth 3,609 feet.

Miller County

E. A. Martin is drilling No. 4 Dale, Section 23-15-26, at 3,100 feet.

Ouachita County

J. E. Crosbie's No. 1-A Primm, Section 24-15-16, set 10-inch at 62 feet and is drilling at 1,500 feet. McDonald Brothers cemented 6⅝-inch at 2,793 feet on No. 1 Wilson, Section 25-15-18, total depth 2,818 feet and Charles McDonald's No. 1 Wilson in the same section is drilling at 2,230 feet. Sam Sklar tested a show of oil at 2,014-28 feet on No. 1 Langley, Section 19-15-15, cored a water sand at 2,078 feet and shut down for orders.

Union County

Bell and others' No. 1 Terrell, Section 27-18-14, is drilling at 1,720 feet. T. J. Bush and others set 113 feet of 12½-inch on No. 1 McDonald, Section 11-17-18. Calgo Oil Co.'s No. 1 Primm, Section 25-18-15, is drilling at 3,990 feet. E. L. Foster shut down on No. 1 Murphy Land Co., Section 22-17-17, at 1,400 feet. J. O. Moore is drilling around 150 feet on No. 1 Union Sawmill, Section 11-18-12.

MISSISSIPPI

Monroe County

Arkansas Natural Gas Corp. got a show of about 500,000 feet of gas through 2,500 feet of water in No. 1 Rye, Section 22-15-17, and is arranging to set 6-inch at 2,852 feet, total depth.

Chickasaw County

Hightower & Goldstein have resumed drilling No. 1 Davis, Section 20-13-3, shut down at 1,032 feet singe August last year, total depth 1,106 feet.

Sharkey County

Atlantic Oil Producing Co.'s No. 1 Houston, Section 30-11-6, is drilling at 2,155 feet.

Webster County

Cumberland Oil Co. is arranging to resume drilling on No. 1 Henley, Section 15-21-11, shut down at 1,960 feet since last August.

ALABAMA

Washington County

S. A. Hobson, set 10-inch casing to cut off an artesian flow at 260 feet on No. 1 Hobson, Section 9-8-2, and is drilling No. 1 Wilson, Section 27-7-1w at 350 feet.

MICHIGAN FIELDS

(Continued from Page 64)

Township were dry in the upper Traverse and are going on to the lower Traverse. The Muskegon Development Co.'s No. 1 Toppen, SW NE, Section 9-10-16, was dry at 1,700 feet, and the Puritan Oil Co.'s No. 1 Bishop had little hopes at 1,682 feet.

Wells Shut Down

Four wells nearly completed in the Dundee in Muskegon Township were shut down. The Johnson Oil Refining Co.'s No. 3 L. Heinz, SW NE, Section 9-10-16, was cased and mudded at 1,970 feet ready to be drilled into the Dundee gas but not the oil. The Swastika Oil & Gas Co.'s No. 1 Berkema, SW NW, Section 8-10-16, was cased at 2,027 feet and also waiting to be drilled into the gas of the lower formation.

The Holland Oil & Gas Co.'s No. 2 Joslyn, NE SE, Section 5-10-16, was still uncompleted after reaching the casing point above the Dundee at 2,047 feet. The Puritan Oil Co.'s No. 1 Plunkett, SE SE, Section 8-10-16, was still shut down at 1,900 feet waiting to be drilled into the Dundee gas as an offset to the Consolidated Oil Co.'s No. 1 Plunkett 7,000,000-foot gasser.

Eight other wells in Muskegon Township were shut down, 1 was fishing, 10 were drilling, 4 were spudding, 4 were moving in or rigging and 35 were only locations. Included in the drilling wells are two former upper Traverse producers which are to be drilled to the Dundee gas. They are the Lima Oil Corp.'s No. 2 M. Figge, SE NW, Section 9-10-16, and the Muskegon Oil Corp.'s No. 1 Torrent, SW SE, Section 8-10-16.

Gas was struck in one Laketon Township well and oil in another at 1,677 feet each in the upper Traverse.

Nelson and Witt's No. 1 G. Fenner hit a flow of about 1,000,000 feet a day of gas at 1,677 feet and was forced to stop drilling at 1,690 feet by the lack of gas for the boiler. It is in NW SE, Section 11-10-17.

The top of the upper Traverse was encountered in the Dixie Oil Co.'s No. 1 Ross, NE SW, Section 12-10-17, at 1,-677 feet and filled up 200 feet of oil. An attempt will be made to make it a paying producer at this depth.

Laketon Township

Four wells in Laketon Township are near the Dundee. Three are shut down and the fourth is drilling. The Holland-Weideman Association's No. 1 Comley, NE NE, Section 14-10-17, was shut down for lack of drilling gas at 2,010 feet.

The Double Shot Oil Co.'s No. 1 H. Dykstra, NW SE, Section 12-10-17, has been cased and cemented at 2,025 feet and shut down. The Johnson Oil Refining Co.'s No. 2 Thompson, SW NE, Section 12-10-17, is cased and mudded at 2,041 feet. The Ohio Oil Co.'s No. 1 Gates NE NE, Section 11-10-17, is drilling at about 2,000 feet.

Sixteen other wells are shut down, 11 drilling, 6 spudding, 3 rigging or moving in, and 22 are locations. This includes 9 new locations announced during the week.

New Locations

Eleven new locations, 9 in Laketon

Township and 2 in Muskegon Township, were announced, although operations have been started on only three.

Four of the new locations in Laketon Township are on the 20-acre property owned by Albert Young and previously leased by S. E. Bortz and later by the Pure Oil Co. The lease was sold to Nedeau and O'Toole who split it up into three parts and resold the oil and gas rights.

C. W. Marsh and others purchased the east 10 acres and moved in a rig for No. 1 Young, SE NE Section 12-10-17. A second location for No. 2 Young also was announced. The Porter-Slater Co. purchased the lease on another five acres and must start drilling a No. 1 Young well on it within four months. The same is true of the Cedar Creek Oil & Gas Co.

Maire-Caswell-Kidder announced their No. 3 Shuler location, NW NE Section 12-10-17, and started moving in but stopped with the cut in the Dundee price.

The East Ohio Gas Co. had started its No. 1 Bear Lake Fox Co., NW SE Section 12-10-17.

Three locations on which no activity has been started are: Betty-Jane Syndicate No. 2 Brand, SE SE Section 11-10-17; Paragon Oil Co.'s No. 1 H. DeLong, NE SE Section 12-10-17; and the Reliable Oil & Gas Co.'s No. 1 Murphy, NE NE Section 12-10-17.

The two new locations in Muskegon Township are: Muskegon-Ottawa-Crude Oil companies' No. 3 Torrent, NE SW Section 8-10-16; and Citizens-Lake Shore Petroleum companies' No. 2 Nichols, SE NW Section 8-10-16

Muskegon County Wildcats

The Shifting Sands Land Corp.'s No. 1 fee, SW NW Section 20-11-15, Cedar Creek Township, east of the Swedish Church on M-20 and southeast of the village of Twin Lake, was abandoned as a "duster" at 2,262 feet. The well was 68 feet in the Dundee and struck salt water which rose 500 feet. A show of oil had been encountered in the upper Traverse at 1,820 feet.

Harper and Newman's No. 1 Cook, NE NE Section 2-9-16, Fruitport Township, had no show of oil, gas or water at 2,118 feet Saturday and was drilling in after casing at 2,094 feet.

The Eureka Oil & Gas Co.'s No. 1 Featherstone, SW SW Section 35-11-16, Dalton Township, had a bad fishing job at 2,018 feet.

J. F. Carpenter's No. 1 Jensen, SE NE Section 2-11-15, Cedar Creek Township, was reported to be casing above the Dundee at below 2,032 feet.

The White River Oil Corp.'s No. 1 Montague, SW SW Section 21-12-17, Montague Township, had a hole full of water and was drilling at 1,920 feet.

Three other Muskegon County wildcat wells were drilling at less than 1,000 feet. L. C. Patterson's No. 1 Monette, SE SE Section 13-12-15, Holton Township, had reached about 300 feet. The Cloverville Oil Co.'s No. 1 Born, NE NE Section 12-9-16, Fruitport Township, was 600 feet deep and the Shoreline Corp.'s No. 1 Farrell, NW SW Section 20-11-16, Dalton Township, was at 450 feet.

The General Land & Development Co.'s No. 1 W. W. Lamos, NE NW Section 24-12-18, White River Township, had not completed rigging and P. G. Fennell's No. 1 Gustafson, SE SE Section 19-11-16, Dalton Township, was shut down at about 200 feet.

Two other Muskegon County wildcat wells also were shut down: Creek Land Development Co.'s No. 1 Wittels, NE NE Section 34-11-15, Cedar Creek Township, at 1,275 feet; and the Moon-Fink Development Syndicate's No. 1 Nash, SW NW Section 20-9-14, Ravenna Township.

Western Michigan Wildcats

The Kenyon Oil Co.'s No. 1 Gould, NW SW Section 24-9-10, Courtland Township, Kent County, near Rockford, was dry at 3,000 feet, the principal development among western Michigan wildcats other than the discovery of oil in the upper Traverse pay sands in Mason County.

The top of the Dundee formation was encountered in the Kenyon's Gould well at 2,900 feet, the bottom salt water at 2,990 feet and the well was abandoned as a duster at 3,000 feet.

Location for a new structure test in Oceana County was made by the Muskegon Oil Corp. and associated companies, No. 1 F. Burmeister, SE NE Section 34-14-18, Benona Township, Oceana County.

The same companies' No. 1 Essenberg-Dreyer, SE SW Section 13-5-16, Park Township, Ottawa County, near Holland, was shut down at 1,930 feet as the week closed. It was being drilled into the Dundee formation.

Three other western Michigan wildcats were shut down and three fishing. Lima Oil Corp.'s No. 1 Atwood, SE SW Section 6-11-13, Ashland Township, Newaygo County, was shut down at 2,097 feet. Pennsylvania Oil & Gas Co.'s No. 1 Bert Snow, NW SE Section 23-15-15, Leavitt Township, Oceana County, was shut down at 610 feet; and the Mid-Continent Development Co.'s No. 1 Easley, NW NW Section 19-6-11, Kent County, near Grand Rapids, also was shut down at about 965 feet.

Paul Schulte's No. 1 Blanchard, SW SW Section 30-10-10, Nelson Township, Kent County, was fishing for tools at 2,485 feet. Sankey Oil & Gas Co.'s No. 1 Beem, NW SE Section 22-14-15, Newfield Township, Oceana County, was still fishing at 810 feet. Kelley Goldboss' No. 1 Kluting, SW NW Section 10-8-13, Wright Township, Ottawa County, was fishing at 380 feet.

Decem Development Co.'s No. 1 T. Veenstra, SW SE Section 26-13-15, Greenwood Township, Oceana County, has not yet started drilling although the rig is on location. Edward DuVall is also rigging for his No. 1 Fiel, SW NE Section 31-15-18, Golden Township, Oceana County.

Two Oceana County structure tests of the Muskegon Oil Corp. and associated companies are little more than 100 feet deep. No. 1 Kinstner, SE SW Section 17-13-17, Grant Township, and No. 1 J. Zarvel, W SW Section 8-14-17, Shelby Township.

KANSAS FIELDS

(Continued from Page 52)

NW NE, Section 35-23-11, is dry and abandoned at 1,927 feet.

McPherson County

Newman and others' No. 1 Deepenbrock, NW cor. NE, Section 2-17-1w, is dry and abandoned at 3,534 feet.

Marion County

Empire Oil & Refining Co. is building the rig for No. 2 Suderman, NE cor. SE NE, Section 12-19-2. No. 3 Suderman, SW cor. SE NE, Section 12-19-2, is also a rig under construction. Darby Oil Co. made location for No. 2 Nickel, NW cor. NE SE, Section 12-19-2. Shaffer Oil & Refining Co. made location for No. 1 Melsher, SW cor. NW NW, Section 7-19-3. Courtney B. Davis made location for No. 2 Rample, NW cor. SW NW, Section 7-19-3.

Osage County

Papoose Oil Co. made location for No. 1 Evans, SW cor. NW NW, Section 34-18-14.

Russell County

Wilcox Oil & Gas Co.'s No. 1 Dortland, NW cor. Section 4-14-15w, was completed for 60 bbls. in sand at 3,047-3,100 feet.

Sedgwick County

Shaft, Held & Youker have the rig up for No. 1 Koble, NE cor. NW NW SE, Section 36-25-1w, Valley Center Pool. Robinson and others' No. 1 Whitaker, SE cor. SW NE, Section 36-25-1w, is rigging up. Richards & Haun's No. 1 Townsite, NW cor. NE SE, Section 36-25-1w, is a rig. Plains Oil Co.'s No. 1 School Lot, NE cor. SE SE, Section 36-25-1w, is rigging up. Hockett & Van Derman's rig is up for No. 1 Kessler, SW cor. NE, Section 36-25-1w.

Durham Oil Co. has the rig up for No. 1 Hodge, NE cor. NW SE, Section 36-25-1w. Bu-Vi-Bar Petroleum Co. and others made location and dug cellar for No. 3 T. Goodrich, SW cor. SE, Section 6-26-1. Producers Oil Co. made location for No. 1 F. Jones, NW cor. SE SE, Section 31-26-2. Bu-Vi-Bar Petroleum Co. and others' No. 1 Shawver, NE cor. NW, Section 7-26-1, is a cellar. No. 2 Shawver, SE cor. NE NW, Section 7-26-1, is also a cellar. The cellar has been dug for No. 1 Rothfuss, NW cor. NE NW NE, Section 7-26-1. Location has been made for No. 1 Byers, NW cor. SW NE, Section 7-26-1. No. 1 Steele, SE cor. Section 1-26-2w, is dry and abandoned at 3,875 feet.

ROCKY MOUNTAIN AREA

(Continued from Page 61)

of Los Angeles, is reported to have acquired the holdings of the Blanco Oil & Gas Co., including No. 1 Hartman, NW cor. NE, Section 8-29-7w, and will move in additional machinery and complete the operation as soon as titles are straightened up. The hole is bottomed at 518 feet.

In Torrance County, the Bluhall Oil Co.'s No. 1 Kistler, NW SW, Section 7-4n-10e, is shut down for orders at 1,735 feet, and the Sinco Oil Co.'s No. 1 Katchin, C NE NW, Section 13-7n-7e, is drilling at 100 feet.

UTAH

Utah had little news outside of routine. The Continental Oil Co.'s No. 1 Boundary Butte, Section 22-43-22, San Juan County, is still bottomed at 4,525 feet where it had 3,000,000 or more, feet of dry gas in the Pennsylvanian. The combination string of casing caused considerable trouble and it was pulled and a new string of seamless casing will be run. In Uinta County, the Western Venture Corp.'s No. 1 Krumvieda, Section 6-5s-21e, on the Vernal monocline, failed to get a water shutoff and is recementing the 6¼-inch at 1,266 feet, on top of the sand which showed some saturation. Total depth is 1,291 feet. The Maude Ellen Oil Co.'s No. 1, Section 28-3s-21, Neal Dome, is still shut down at 1,450 feet on top of the Moenkopa sand and showing a little oil and gas, waiting for drill stem. This stem is at Craig, Colo., but on account of the extremely cold weather and snow, it has been delayed in arriving. The Utah Southern Oil Co.'s No. 1 Farnsworth, Section 29-4s-1e, Pleasant Valley Dome, is drilling at 2,680 feet in hard gray limy shale. Same company's No. 1-A J. L. Shaffer, Section 36-26-20, Cane Creek Dome, in Grand County, is back into salt at 2,700 feet and drilling.

COLORADO

Zero weather and a blanket of snow over the State not only hindered drilling operations in Colorado this week, but played havoc with lines of communication and delayed reports from the more remote wildcats. The Iles Field in Moffat County was cut off from the outside world for a few days and when communication was re-established it lasted only a short time when another blizzard swept the country. The latest news available from Thomas McLaughlin and others' No. 1 Williams, NW SW, Section 2-3n-92, in the fault block south of the Iles Dome, was that it was drilling at 2,735 feet in shale with another slight show of oil. The fact that sand has not yet been encountered rather discounts the theory that the horizon topped at 2,175 feet was the Frontier as the well is now deeper than the interval between the top of the Frontier and the top of the Dakota as shown by the logs of the wells on the Iles Dome. The Texas Production Co.'s No. 36 Lloyd, SE cor., Section 21-4n-92, Iles Dome, has not made any new depth this week, still being bottomed at 3,119 feet and drilling on an underreamer lug at 3,108 feet. The Midwest Refining Co.'s No. 24-SD Parkinson, SE NW, Section 22-4-92, is drilling at 2,910 feet in black shale. On the Moffat Dome, the Texas Production Co.'s No. 11 Knowlton, SE cor., Section 33-5n-91, is drilling at 4,285 feet and is believed to be near the Morrison. Same company's No. 5 Wick, Section 10-4-91, is bottomed at 4,596 feet and underreaming at 4,353 feet.

Pueblo Test

The high spot in interest in Colorado continues to be the Rozella Oil Co.'s No. 1 Shaw, NW NW, Section 3-22-63, 13 miles southwest of Pueblo. No change is reported in the status of the well which stands at 1,190 feet with considerable oil in it, but which has not been [illegible] on account of pending litigation. J. A. Clark, in the district court Pueblo, denied the application of C. Bradler and Isadore Schuster for an junction restraining the Rozella com from going ahead with operations, paving the way for a test, while issues are tried on their merits. Rozella company has purchased some ing which it is having moved to the but it is probable the rig will have strengthened, new power supplied, the hole underreamed before it will shape for a test. Dean E. Winch consulting geologist of Denver, who week took some samples at an exp half a mile from the well, has had analyzed to determine the surface tion. After getting the results, he presses the opinion that the oil in ing either from the Dakota or just it. There is considerable leasing on in the district and some acreage changed hands at $5 to $6 an Owners are insisting on strict dri provisions and in most instances a well to be started within 60 days, eral announcements of plans to drill been made, the locations extending several miles from the discovery. A cate of Colorado Springs people by A. B. Christy, is reported to three wells in contemplation, one an offset to the discovery on the another in the NW Section 13-22-63, the other in NW Section 16-22-63. Brothers, of Casper, are making a tion to the southeast of the discovery.

Several other groups have acqu leases under contracts to begin dri by March 15, while others are awai geological reports before underta drilling contracts. The major compa are keeping in close touch with the sit tion but appear to be awaiting fur developments before going in. C. Puckett, who was interested in the dri ing of two wells near Baxter Stati just east of Pueblo, has renewed leases in that area under an agreem to drill within a year. Near Tac in the northeastern part of Pueblo Co ty, the Boone Oil & Gas Co. has resu drilling on its No. 1 Ritter, NW Sec 33-18s-60, and at last reports was be 3,000 feet. The 6¼-inch was set at 960 feet. The well has had some sh ings of oil and gas.

Jackson County

In Jackson County, the North Pa Oil Co.'s No. 1 Goettler, NE SE, Se tion 9-6n-82, on the Crosby Draw str ture, was abandoned at 900 feet. It a water sand at 470-520 feet and anot at 900 feet, the latter probably be the Dakota. The Producers & Refin Corp.'s operation at Pole Mountain Continental Oil Co.'s operation Walden are both shut down for the wi ter.

In the Florence-Canon City district Fremont County, the Continental Co.'s No. 1 Isabel, SW NE, Section 2 70, was dry and abandoned at 3,030 f This was a surprise as it is surround by producers.

In Larimer County, the Five Sq Oil & Gas Co.'s No. 1-A State, SW co Section 16-4-69, Berthoud Dome, is pr paring to drill out cement at 2,902 f at which depth the 8¼-inch was s It is bottomed just above a sand wh yielded gas in its first well. On t Wellington Dome, the Continental Co. is running two strings of tools. No. 2 Elder, SW NE, Section 18-9- south of production, is drilling at 3,7 feet, and its No. 3 Mitchell, SE N Section 6-9-68, is drilling at 635 f On the Round Butte Dome, Stanley Ba rows and others' No. 1, NW SE, Se tion 7-11n-68, is shut down for a f days below 1,960 feet, in the Morris It is to be drilled down to the Sundan

In Mesa County, on the western e of the State, Parrish & Green's No. D.&R.G.W., NE NW, Section 23-1s- in the city limits of Grand Junction, co menced spudding on February 5. This a shallow test to a sand which is s to have yielded considerable gas in well drilled 35 years ago.

In Montrose County, the Uncompah Oil & Gas Co.'s No. 1, Section 27-50-1

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{Number One of a Series}

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It might be forty miles out on the bare prairie in Texas, a spot no whit different than a million similar spots in a territory bigger than the whole of New England.

It might be in a valley in Oklahoma, a valley set off from the rest of the world by a ridge of hills that have turned back civilization since the age of stone.

It might be within a water ball's throw of a luxurious hotel in California where life flows full and pleasure is the order of the day and night.

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is cleaning out at a total depth of 1,450 feet.

Boulder County

The Boulder Oil Co. has purchased some new equipment and contracted with two drillers from Wyoming to resume on its No. 1 Hoover, NE NE, Section 26-1n-70, east of Boulder, in Boulder County. It has been shut down for some time at 3,000 feet.

Another test in the Denver Basin, the plains region east of the mountain range, commenced spudding on January 31, in the Progressive Oil & Land Co.'s No. 1 Pease, NE SE SW, Section 27-10s-60, on the Stringer structure, in Elbert County. It started in a 12½-inch hole with a rig for a 3,000-foot hole. Elevation is 5,768 feet.

The Ohio Oil Co.'s No. 1 Reiter-Foster, SE cor., Section 16-12n-100, on the Hiawatha Dome in Moffat County, is drilling at 3,340 feet, below all horizons heretofore tested by other wells on the structure. The show for 1,000,000 feet of gas in a shale break recently reported was at 3,278 feet.

In Routt County, the Texas Production Co.'s No. 4 Belle Dennis, NE SE, Section 7-6n-86, Tow Creek Dome, is drilling at 4,093 feet in gray sand. Same company's No. 6 Quaintance-Hocking, Section 18-6-86, cemented the 12½-inch at 493 feet.

WYOMING

Wyoming reported three completions. The Utah Southern Oil Co.'s No. 3, NE cor. SW, Section 29-56-97, on the Garland Dome in Big Horn County, was completed as a gas well with an open flow of 15,000,000 feet with a rock pressure of 1,500 pounds. The well was drilled to 3,763 feet, probably the top of the Amsden sand as it had cut 53 feet of the Tensleep. It topped the Embar formation at 3,255 feet and encountered gas at 3,422-29 feet with shows of oil at 3,384-3,445 feet. The 5⅞-inch was cemented at 3,317 feet. The other completions were in the Osage Field in Weston County, the Osage Oil Trust's No. 3, Section 13-46-64, being completed for 50 bbls. initial at 1,431 feet, and James McCullough's No. 1 on Section 24-46-64, at 1,552 feet for 40 bbls. initial.

Several wells in the Oregon Basin Field in Park County are at an interesting depth. The Big Horn Petroleum Co.'s No. 1 Trumbull, SW NE, Section 7-51-100, set the 6¼-inch on top of the Embar at 3,858 feet. The location is to the southwest of the saddle connecting the north and south dome and some distance out from the producing wells. It is reported that a core showed oil in the Embar, but this area generally is looked upon as doubtful territory. The Wyoming Western Oil Co.'s No. 3 Hough, SE SE, Section 18-51-100, about midway between the tops of the north and south domes and a little to the west, is drilling at 3,192 feet and getting rather deep. It is reported it has not yet reached the Embar and that it is checking with the Lenco Petroleum Co.'s No. 1 Lyle, SE cor., Section 24-51-101, which is apparently in the syncline and which is shut down at 4,486 feet. The Wisconsin Holding Co.'s No. 2 Rousch, SW SW, Section 9-51-100, is drilling at 3,000 feet. This well is one location east of the offset location on the north to the Continental Oil Co.'s No. 1-A State on Section 16, which came in for better than 900 bbls. but showed some water. The Ohio Oil Co.'s No. 1 Sonners, Account 3, SE Section 8-51-100, an offset to the Continental's No. 1-A State, topped the Embar at 3,770 feet and set the 6⅝-inch at 3,785 feet. It is drilling out the cement. The Enalpac Oil & Gas Co.'s No. 2 Cactus, SE Cor., Section 6-51-100, is drilling at 3,291 feet, and the Producers & Refiners' No. 1 Beck, Section 29-52-100, is shut down at 563 feet.

The Texas Company's refinery, now under construction at Cody, is expected to be ready for operation about March 1. The completion of the refinery, which will run crude from Oregon Basin, probably will stimulate the market for the oil. It was reported this week that Charles E. Orchard had contracted the production from his two wells on the Rue lease on the south dome to the Russell Oil Co. No. 1 Rue, SW cor., Section 28-51-100, recently was put on the pump and is making 400 to 500 bbls. a day. No. 2 Rue, a little to the north of No. 1, has not been put on the pump, but is making around 200 bbls. a day natural. The price at which the oil was sold was not disclosed, but since the Government has not approved any contracts for the sale of Oregon Basin crude at less than 85 cents per barrel, it is assumed it was at least at that figure, or better. This indicates there will be a market for the oil now being produced, at 85 cents or better, as soon as the refinery is completed. The field has an estimated production of 6,000 bbls. a day, but quite a little of this is shut in. It is not likely there will be any increase of consequence in the field for some time as there are no new wells being started in the proven areas and it takes three to four months to complete a well after spudding. One company contracted for 2,000 bbls. a day from the field at 53 cents per barrel under a five-year contract, but the Interior Department has not approved of this agreement and the matter is now an issue in the courts.

Park County

The Producers & Refiners' No. 1, SE NW, Section 7-57-97, on the Sage Creek Dome in Park County, is drilling in sand at 1,700 feet, and the Ohio Oil Co.'s No. 1 Pulley, NW NW, Section 27-53-101, Shoshone anticline near Cody, is plugging back from 4,780 feet to the top of the Embar. The Midwest Refining Co.'s No. 1 Kirk, SE cor., Section 23-58-98, Frannie Dome, is drilling at 1,345 feet in red shale, and its No. 36 Rosenberg, SE cor. NW, Section 25-58-98, is drilling at 225 feet in brown sandy shale.

In Big Horn County, the Prairie Oil & Gas Co.'s No. 1 Chilcote, Section 35-56-95, Little Sheep Mountain Dome, is underreaming the 8¼-inch to 2,580 feet, and the Texas Production Co.'s No. 1, Section 23-45-100, on the Skelton Dome, is drilling at 1,100 feet in blue shale.

The Ohio Oil Co.'s No. 1 Humphreys, Section 2-12-101, Canon Creek Dome, in Sweetwater County, is drilling at 2,175 feet.

The Midwest Refining Co.'s No. 1, Section 35-22-115, Waterfall Dome, Lincoln County, is drilling at 2,370 feet and still in buff-colored sand.

In Carbon County, the Producers & Refiners Corp.'s No. 1, Section 14-25-89, on the Sherrard Dome, has extinguished fire resulting from ignition of the gas. The well is bottomed at 3,027 feet and last week was reported working on frozen gas line. It had 3,500,000 feet of gas in the Frontier, just above the present horizon.

In Uinta County, the California Co.'s No. 1 Union Pacific, Section 7-17-116, Muddy Creek Dome, is drilling at 2,589 feet in pink sand. Same company's No. 1 Wyss, Section 12-32-115, South Cottonwood Dome in Sublet County, is shut down at 1,283 feet on account of the blizzard, and its No. 1 Bushell, Section 11-29-115, Snyder Basin, is still bottomed at 2,503 feet and underreaming.

The Ohio Oil Co. has taken an option from owners of permits and leases on the Sheldon Dome, in Fremont County, on the same line of folding as the Pilot Butte Field, principally in Sections 9, 10 and 15-5n-2w. Core drilling operations are to commence as soon as weather conditions permit and in the meantime the options have been placed in escrow. If exercised, they provide for the drilling of a deep test to be started not later than June 20. Three wells have been drilled on the structure, all showing considerable gas and two showing some oil.

Matthew Foreman and associates, of Detroit, are reported to have acquired 20,000 acres on the Rocky Point anticline, 45 miles north of Moorcroft in northeastern Wyoming, upon which it is expected a test will be started next spring.

The Mountain Fuel Supply Co., a subsidiary of the Ohio Oil Co., which has been organized to handle the gas production for the Western Public Service Corp., has opened offices in Rock Springs. These interests are preparing to build a gas line into central Utah as soon as weather conditions are better. C. R. Hetzler, formerly president of the Billings Gas Co., one of the Ohio's subsidiaries, will have active charge of the work of the new company.

MONTANA

Every oil field in Montana is practically shut down on account of bad weather. Five wells were completed in the Pondera Field the past week in spite of the cold weather. The Midwest Refining Co. had three new producers; the Fulton Oil Co. had one; and the Texas Production Co., one. The three Midwest completions will average about 80 bbls. each and are on Section 15-27-4, except one on Section 14 to the east. The Fulton Oil Co.'s well is on Section 9-27-4, and will make a small producer of about 15 bbls. The Texas Production Co.'s well is on Section 15-27-4, and is also a small producer, good for about 20 bbls. The Texas and the Fulton wells will be shot.

Montana operators look for a bright season for the summer of 1929. According to present indications, there will be more wildcatting in Montana than ever before and contracts are being entered into now for tests on wildcat locations. Most of the new operations are to be located in the central and western parts of the state, but the Baker anticline in eastern Montana is to have five wells and possibly more, to test parts of the structure that are still virgin.

ROCKY MOUNTAIN PRODUCTION
Daily Average Runs Week Ended February 9

WYOMING

Salt Creek	33,280
Big Muddy	2,290
Grass Creek	2,230
Elk Basin	770
Ferris	50
Rock River	2,420
Lance Creek	.....
La Barge	2,680
Poison Spider	980
Oregon Basin	3,350
Osage	470
Lander	450
Byron	40
Lost Soldier	3,380
Simpson Ridge	60
Dutton Creek	50
Rex Lake	120
Hamilton Dome	720
Greybull	10
Total Wyoming	53,350

MONTANA

Cat Creek	1,390
Kevin-Sunburst	6,740
Pondera	2,720
Total Montana	10,850

COLORADO

Florence	1,114
Moffat	1,062
Fort Collins	2,307
Iles Dome	1,474
Rangely	100
Tow Creek	443
Boulder	25
Total Colorado	6,525

NEW MEXICO

Rattlesnake	437
Hogback	440
Artesia	962
Cap Rock	119
Table Mesa	.....
Total New Mexico	1,958
Total Rocky Mountain	72,683

OKLAHOMA FIELDS

(Continued from Page 52)

lurian Oil Co.'s No. 1 Jackson, SE cor. Section 30-17-7, is dry and abandoned at 3,207 feet. The Prairie Oil & Gas Co.'s No. 6 Coachman, NW cor. NE NW, Section 20-17-7, Drumright Pool, was completed for 80 bbls. in Bartlesville sand at 2,726-60 feet. Gray Oil Co.'s No. 2 Ramsey, SW cor. NE SE, Section 10-14-10, is dry and abandoned at 3,265 feet.

Muskogee County

Grubbs & Young's No. 3 Friday, CWL SW NW, Section 8-15-15, is rigging up to deepen from 1,149 feet. Joe Paul and others' No. 5 James, NE cor. SW SW, Section 17-14-17, is drilling at 250 feet. Sioux Oil Co. moved a machine in for No. 1 Brown, SE cor. NW NE NE, Section 19-13-19. E. A. Smith and others' No. 1 Maher, C SE NW, Section 21-13-19, is spudding.

Okfuskee County

Sinclair Oil & Gas Co.'s No. 1 Micco, SE cor. NW SW, Section 36-11-9, is rigging up to deepen from 3,050 feet. Mid-Continent Petroleum Corp. and others moved the rig out for No. 1 Dindy "B," NE cor. SW NE, Section 31-11-11. Kingwood Oil Co.'s No. 2 Brown, CNL NE SW, Section 2-10-11, is rigging up.

Minnehoma Oil Co.'s No. 1 Fixico, NW cor. SW SE, Section 29-12-10, has been completed for 150 bbls. in sand at 2,910-38 feet. Darby Petroleum Corp. and others' No. 1 Smith, NE cor. SW Section 33-12-10, is dry and abandoned at 3,824 feet.

Okmulgee County

Highland Oil Co.'s No. 7 S. Barrett, SE cor. NE NE NW, Section 2-15-14, is drilling at 1,050 feet. Sheldon Oil Co.'s No. 5 Baker, SE cor. SW SE, Section 15-13-12, is drilling at 400 feet. J. H. Rebold and others' No. 5 Haskins, CEL NW NE, Section 22-13-12, is rigging up to deepen from 2,100 feet. Aiken Oil Co. and others' No. 10 S. Fox, CEL SE NW, Section 22-13-14, is drilling at 950 feet.

Miller & Moore's No. 4 L. Rowe, SE cor. NW NE, Section 10-15-14, was completed for 2 bbls. in sand at 947-56 feet. J. H. Rebold Oil Co.'s No. 2 Scott, NW cor. SW NE, Section 27-13-11, is dry and abandoned at 3,300 feet. Simms Petroleum Co.'s No. 7 Dunn, NE cor. NW NE NE, Section 21-13-14, has been abandoned at 2,608 feet.

Aiken Oil Co. and others' No. 2 S. Fox, CEL SE NW, Section 22-13-14, was completed for 10 bbls. at 1,650 feet after drilling at 1,850 feet and plugging back to the old depth. Rounsaville and others' No. 4 Rentie, CSL NE SE, Section 30-12-12, made 15 bbls. from sand at 1,122-1,235 feet.

Pawnee County

McMan and others' No. 1 Rogers, NW cor. SW SE, Section 27-20-9, is drilling at 660 feet.

Seminole Production

The production of the more recent pools of the Greater Seminole area by companies and leases on Friday, February 8, follows:

Little River Pool

Company, farm—	Location	Wells	Prod.
Amerada:			
Nitey	2- 7-6	3	85
Amerada-Wilcox:			
Fore	35- 8-6	2	65
Barnsdall:			
Cotcha	23- 7-6	2	50
Hotulke	22- 7-6	3	60
Walker	4- 7-6	1	45
Blackwell:			
Baker	11- 7-6	4	2,10
Nitey	35- 8-6	6	1,65
Talley	14- 7-6	4	1,14
Bryan & Emery:			
Walker	4- 7-6	1	1
Carter:			
Cotcha, M.	23- 7-6	3	2
Cudjo, L.	23- 7-6	2	2
Fish	36- 8-6	4	2
Harjo, C.	11- 7-6	3	4,10
Harjo, M.	13- 7-6	2	2,87
Jackson	11- 7-6	4	1,50
Larney	24- 7-6	3	3,20
Lena	10- 7-6	1	1,62
Moore	2- 7-6	2	6
Tewee	14- 7-6	6	2,10
Thomas	11- 7-6	1	10
Wilson	12- 7-6	2	9
Champlin:			
Tewee	14- 7-6	2	1,40
Continental:			
Cosar	36- 8-6	7	1,70
Cosar, M.	25- 8-6	1	34
Continental & Fisher:			
Milsey	11- 7-6	2	30
Empire:			
Charty	24- 7-6	1	...
Coker	13- 7-6	1	(6
Sandiln	3- 7-6	1	1
Gypsy:			
Brown, C.	33- 8-6	2	2
Brown, M.	33- 8-6	1	9
Campbell	33- 7-6	2	1
Conard	22- 7-6	2	5
Cosar, W.	36- 8-6	2	7
Cotcha	22- 7-6	6	2,85
Denmark	11- 7-6	4	1,16
Hulhoke	14- 7-6	10	2,70
Mungee	1- 7-6	1	1
Payne	5- 7-7	1	1
Pottie	35- 8-6	4	1,02
Renton	11- 7-6	3	69
Independent:			
Davis, R.	13- 7-6	3	2,46
Tewee	14- 7-6	6	2,25
Williams	15- 7-6	1	58
Independent & Highway:			
Harris	23- 7-6	8	3,87
Independent & White Eagle:			
Davis	2- 7-6	4	36
I. T. I. O.:			
Campbell	1- 7-6	1	1
Dungan	35- 8-6	3	37
House, M. A.	1- 7-6	1	1
House, W. E.	1- 7-6	1	1
House "B"	2- 7-6	4	1,17
Hull	26- 8-6	3	21
Jackson	1- 7-6	3	47
McCulla	1- 7-6	3	19
Nitey	2- 7-6	6	2
Phoebe "A"	36- 8-6	2	1
Phoebe "B"	36- 8-6	3	1
Reed	1- 7-6	1	1
Sokotheche	1- 7-6	3	57
Magnolia:			
Cruse	2- 7-6	4	2
Denby	11- 7-6	4	1
Dixon	31- 8-7	1	1
Harjo, A.	14- 7-6	2	1
Harjo, B.	14- 7-6	2	2
Pottle	35- 8-6	4	2
Reed, E.	31- 8-7	1	1
Reed, I.	22- 7-6	3	2
Marland-Shaffer:			
Harrison	4- 7-7	1	1
McCulloch & Sands:			
Harrison	4- 7-6	1	1
Mid-Continent:			
Brunner	11- 7-6	4	1
Eleck	23- 7-6	1	2

Company, farm—	Location	Wells	Prod.
Smith	5- 7-7	2	3,190
Wadsworth	36- 8-6	7	410
W. B. Pine:			
Hoyecha	26- 8-6	6	1,902
Pine-Phillips:			
Pottie	35- 8-6	2	570
Prairie:			
Chilcoat	25- 8-6	3	880
Dungan	35- 8-6	1	....
Gibson	14- 7-6	5	1,490
Harris	14- 7-6	4	1,395
House	2- 7-6	4	75
Johnson	24- 7-6	1	730
Lustey	5- 7-7	1	40
Moppin	24- 7-6	1	1,845
Talley	14- 7-6	4	1,655
Prairie & Amerada:			
Sunny	14- 7-6	8	5,610
Prairie:			
Brinson	24- 7-6	1	1,488
Cotcha	14- 7-6	9	3,975
Harjo	11- 7-6	4	1,551
Hollins	11- 7-6	1	228
Reiter-Foster:			
Bunyard	14- 7-6	4	1,495
Shaffer:			
Narcome	36- 8-6	2	307
Shell:			
Caesar	11- 7-6	1	....
Glass	26- 7-6	1	....
Hotulke	23- 7-6	4	743
Jeffries	32- 8-7	1	20
Johnson	13- 7-6	3	3,489
Sinclair:			
Cosar	30- 8-6	3	1,325
Haney	12- 7-6	1	75
Tewee	14- 7-6	2	1,785
Sinclair & Kingwood:			
Pompey	24- 7-6	1	85
Skelly:			
Carl	14- 7-6	2	1,884
Slick:			
Chilcoat	9- 7-7	1	....
Reed	13- 7-6	1	1,700
Williams	15- 7-6	2	865
Wood	26- 7-6	1	330
Slick & Pine:			
Coker	1- 7-6	1	835
Snowden-McSweeney:			
Tiger	13- 7-6	3	497
Superior:			
Potulka	31- 8-6	1	....
Sokethoche	1- 7-6	1	5
Texas:			
Brooks	25- 8-6	1	35
Coker	1- 7-6	3	230
Janey	11- 7-6	4	565
Texas & Independent:			
Hotulke	23- 7-6	4	1,635
Hotulke	22- 7-6	1	....
Tidal:			
House	1- 7-6	2	370
Johnson	1- 7-6	1	79
Twin States:			
Lowe	25- 8-6	1	125
Wigdon & Long:			
Jefferson	31- 7-6	1	15
Total		323	101,524

Maud Pool

Amerada:			
Ballard	1- 8-4	1	205
Gossland	8- 8-5	1	525
Gravel	1- 8-1	1	....
Hallum	1- 8-4	2	2,560
Amerada & Barnsdall:			
Wallace	17- 8-5	1	440
Amerada & Hull:			
Green	20- 8-5	1	785
Barnsdall:			
Coker	11- 8-5	1	1,910
Fife	14- 8-5	1	980
Darby:			
Ketcham	19- 8-5	1	205
Empire:			
Cluck	11- 8-5	1	....
Gypsy:			
Bourassa	7- 8-5	2	700
Coker	10- 8-5	1	232
Miller	18- 8-5	2	8,272
Independent:			
Harding	18- 8-5	3	5,220
I. T. I. O.:			
Simpson	10- 8-5	1	....
State	16- 8-5	1	....
Tully	10- 8-5	1	....
Laurel O. & G.:			
Billington	18- 8-5	1	880
Magnolia:			
Billington	8- 8-5	1	488
Phillips:			
Wallace	17- 8-5	1	38
Phillips et al:			
Hudson	19- 8-5	2	652
Prairie:			
Billington	11- 8-5	2	1,130
Campbell	18- 8-5	3	3,025
Mitchell	15- 8-5	1	105
Pure:			
Lindly	18- 8-5	3	2,038
C. Wiley	8- 8-5	4	4,344
Sinclair:			
Bellars	19- 8-5	5	2,635
Harjo	11- 8-5	1	1,392
Skelly & Margay:			
Lingenfelt	18- 8-5	1	2,839
Slick & White Eagle:			
Villines	20- 8-5	1	....
Sunray & Call-Cul:			
Davis	19- 8-5	1	....
Texas:			
Calvin	7- 8-5	2	480
Tidal:			
Everett	18- 8-5	1	580
Wilcox:			
Smith	8- 8-5	2	980
Total		56	43,640

Mission Pool

Amerada:			
Rice	5- 8-6	1	....
Carter:			
Fuswa	18- 8-6	1	50
Micco	8- 8-6	2	50
Gypsy:			
Baby	6- 8-6	1	15
Barkus	6- 8-6	2	....
Dosar	7- 8-6	1	322
Hardy	7- 8-6	1	....
Mission	5- 8-6	1	....
Mosar	1- 8-5	1	....
Marland:			
Maines	7- 8-6	1	125
Mid-Kansas:			
Moore	7- 8-6	1	125
Shell & Marland:			
Herndon	7- 8-6	1	....
Shell & Papoose:			
Maines	7- 8-6	1	....
Twin States:			
Hayes	8- 8-6	1	50
Total		16	735

Bowlegs Pool

Amerada:			
Roscoe	15- 8-6	7	1,215
Atlantic:			
Baker	10- 8-6	4	480
Fleet	23- 8-6	3	100
Grayson	13- 8-6	4	540
Jones, A.	16- 8-6	2	60
Jones, C.	9- 8-6	1	100
Barnsdall:			
McNac	28- 8-6	1	22
Murrow	11- 8-6	4	300
Carter Oil:			
Bowlegs	15- 8-6	4	825
Burden	23- 8-6	2	240
Harjoche	14- 8-6	6	740
Hilly	23- 8-6	3	57
Jones	11- 8-6	4	530
Walker	15- 8-6	4	555
Wise	23- 8-6	11	1,615
Dixie:			
Calley	11- 8-6	1	90
Empire:			
Lacy	14- 8-6	6	432
Wise	23- 8-6	2	200
Gypsy:			
Bowlegs	22- 8-6	1	130
Bradley	9- 8-6	1	5
Cumsey	10- 8-6	4	750
Grayson	13- 8-6	4	217
Harjoche	10- 8-6	3	370
Jones	11- 8-6	1	....
Walker	15- 8-6	7	800
Wise	23- 8-6	2	90
I. T. I. O.:			
Barnett	24- 8-6	2	247
Barnett "B"	23- 8-6	1	54
Billington	22- 8-6	5	162
Bowlegs	22- 8-6	10	1,587
Davis	13- 8-6	4	512
Fay	13- 8-6	9	1,340
Goforth	15- 8-6	12	1,286
Livingstone	15- 8-6	10	1,886
Lizzie	13- 8-6	3	91
Walker	15- 8-6	8	840
Williams	12- 8-6	1	150
Wilmott	15- 8-6	4	296
Work	24- 8-6	1	5
Youngblood	24- 8-6	2	113
Magnolia:			
Davis	13- 8-6	3	379
Davis, M.	13- 8-6	1	155
Hammond	10- 8-6	8	704
Rhodos	12- 8-6	5	316
Van Buskirk	9- 8-6	2	648
McCulloch:			
Bowlegs	22- 8-6	2	230
Mid-Continent:			
Baker	10- 8-6	4	372
Bowlegs	22- 8-6	1	1
Smith	12- 8-6	6	590
Minnehoma:			
Bowlegs	15- 8-6	4	305
Prairie:			
Gahagan	23- 8-6	3	405
Harber	10- 8-6	8	1,505
Jones	11- 8-6	4	300
Templeton	12- 8-6	5	2,005
Whitney	23- 8-6	4	645
Pure Oil:			
Reed	14- 8-6	14	2,613
Strother "D" 11 &	14- 8-6	4	490
Strother "F"	10- 8-6	7	2,269
Roxana:			
Taylor	16- 8-6	5	76
Shaffer:			
Lacy	14- 8-6	3	375
Sinclair:			
Cumsey	10- 8-6	4	710
Ellen	11- 8-6	6	780
Harjo	14- 8-6	3	612
Jones	9- 8-6	7	280
Taylor	10- 8-6	4	708
Taylor, W.	10- 8-6	3	500
Walker	22- 8-6	4	940
Slick:			
Jones	3- 8-6	1	228
Texas:			
Reed	14- 8-6	11	846
Tidal:			
Grayson	13- 8-6	4	385
Harjoche	10- 8-6	6	1,020
Total		311	40,426

Earlsboro Pool

Amerada:			
Anderson	15- 9-5	2	386
Cowden	4- 9-5	7	1,058
Rogers	3- 9-5	2	82
Atlantic & Gypsy:			
Delaware	13- 9-4	1	....
Atlantic & Sinclair:			
Foreman	18- 9-5	1	130
Barnsdall:			
Brown	10- 9-5	4	1,341
Bruner, F.	2- 9-5	3	118
Bruner, N.	10- 9-5	3	1,083
Cudjo	14- 9-5	1	23
Davis, D.	11- 9-5	3	274
Davis, J.	11- 9-5	4	1,555
Davis, M.	11- 9-5	2	41
Gibson	9- 9-5	8	1,527
Hern	15- 9-5	1	1
Ingram	1- 9-5	8	471
Pack, S.	10- 9-5	4	132
Peter	10- 9-5	4	20
Sango	1- 9-5	4	1,435
Sebalka	15- 9-5	1	227
Sullivan, H.	11- 9-5	1	7
Sull-Harjo	10- 9-5	2	20
Wasutke	12- 9-5	4	812
Burke-Greis:			
Wisner	6- 9-6	2	465
Burke & Red Bank:			
Mays	1- 9-5	1	1,115
Carter:			
Davis	13- 9-5	2	210
James	6- 9-6	5	2,530
Continental:			
Kays	2- 9-5	2	31
Spencer	12- 9-5	4	510
Empire:			
Barker	12- 9-5	1	....
Edmondson	3- 9-5	3	47
Empire & Amerada:			
Bullock	8- 9-5	1	300
Gypsy:			
Bruner	10- 9-5	4	2,835
Carter, B.	11- 9-5	8	2,600
Earl	16- 9-5	1	7
Hunick	5- 9-5	2	2,055
Noble	12- 9-5	4	1,490
Peter	10- 9-5	2	145
Sango	1- 9-5	14	3,727
State	16- 9-5	4	517
Independent:			
Bruner	10- 9-5	3	210
Sullivan	10- 9-5	1	10
Knapp	8- 9-5	4	2,154
Independent-Margay:			
Gains	11- 9-5	3	205
Magnolia:			
Bryant	9- 9-5	6	308
Cowden	4- 9-5	2	20
Dixon	12- 9-5	1	18
Edmondson	3- 9-5	1	5
Germany	30- 9-5	1	....
Gilliam	13- 9-5	1	3,144
Holmsley	11- 9-5	7	17
Hyde	13- 9-5	1	468
Ingram	10- 9-5	1	15
Lena	10- 9-5	3	60
Moore	24- 9-5	1	42
Seay	12- 9-5	9	1,252
Simpson	10- 9-5	4	251
Sparks	11- 9-5	6	326
Sullivan	12- 9-5	3	100
Mid-Continent:			
McCumber	9- 9-5	7	75
Rogers	5- 9-5	1	880
Mid-Kansas:			
Anderson	14- 9-5	2	35
Phillips:			
Dunaway	14- 9-5	1	25
Prairie:			
Baker	24- 9-5	1	35
Davis	13- 9-5	3	985
Graham, C.	3- 9-5	2	20
Graham, O.	10- 9-5	4	1,100
Stidham	11- 9-5	10	1,170
Prairie & Whitney:			
Harjo	24- 9-5	1	75
Roxana:			
Bayless	17- 9-5	1	172
Hearn	13- 9-5	1	82
Spencer	12- 9-5	2	9
Shaffer:			
Clark	1- 9-5	3	117
McCoy	36-10-5	1	1,395
Sinclair:			
Foreman	18- 9-5	1	15
Hollins	12- 9-5	1	40
Sango	2- 9-5	4	1,930
Skelly:			
Mays	1- 9-5	3	2,451
Shepard	6- 9-6	3	1,879
Spencer	12- 9-5	1	40
Skelly & Atlantic:			
Cherry	6- 9-6	4	1,405
Lottie	6- 9-6	1	1,347
Slick:			
James	6- 9-6	2	938
Slick et al:			
Campbell	6- 9-6	4	3,570
Superior:			
Ingram	1- 9-5	1	757
Walker	2- 9-5	3	1,852
Texas:			
Anderson	2- 9-5	8	60
Brown	10- 9-5	8	220
James	6- 9-6	2	245
Rogers	5- 9-5	5	1,730
Wilmott	10- 9-5	7	67
Tidal:			
Walker	35-10-5	3	1,880
Watkins	9- 9-5	7	1,900
Twin States:			
Barker	12- 9-5	3	65
Hern	2- 9-5	4	30
Total		295	66,557

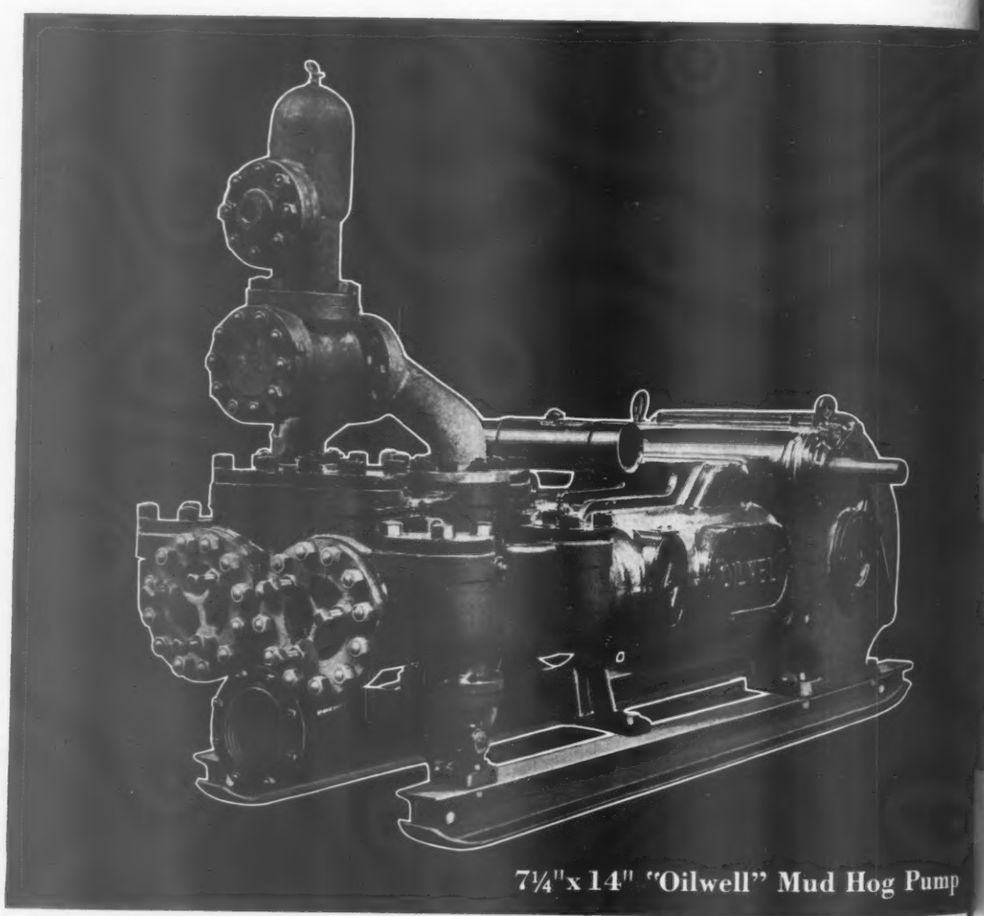
WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 47)

GRAY COUNTY

Anderson et al's No. 1 Heitholt, C NE SW, Sec. 152, Blk. 3, I.&G.N. Sur.	Spud.
B. S. Arnold's No. 1 J. E. Mingale, C E 160 ac., Sec. 212, Blk. B-2, H.&G.N. Sur.	S.D. 1,412 ft.
Arnold & Howell's No. 1 Turnex, C SW, Sec. 111, Blk. B-2	S.D. 2,224 ft. for pipe.
Barnsdall Oil Corp.'s No. 1 M. B. Davis, NW cor. W½ SE, Sec. 9, Blk. 1, A.C.H.&B. Sur.	Spud.
Camel Oil Co.'s No. 1 Harrah-B, 330 ft. each way from NW cor. NE, Sec. 150, Blk. 3, I.&G.N. Sur.	Cellar.
Crabtree Drlg. Co.'s No. 1 B. F. Talley, SW NE, Sec. 114, Blk. M-2, B.S.&F. Sur.	S.O. 2,400 ft.; S.D. 2,735 ft.
Constantine et al's No. 1 Dial, 330 ft. S and E of NW cor. W½ NW, Sec. 32, Blk. 25, H.&G.N. Sur.	Drlg. 2,185 ft.
Danciger et al's No. 1 Shaw, 1,000 ft. N and 330 ft. W SE cor. SW, Sec. 5, Blk. 1, A.C.H.&B. Sur.	35,000,000 ft. gas 2,290 ft.; show oil 2,610-13 ft.; run insert liner 2,645 ft.
Danciger et al's No. 1 J. E. Williams, 330 ft. each way from NE cor. NW SW, Sec. 6, Blk. 1, A.C.H.&B. Sur.	Drlg. 1,900 ft.
Danciger et al's No. 1 Sheridan, SE cor. Sec. 184, Blk. B-2, H.&G.N.R.R. Sur.	Location.
Delmar Oil Co.'s No. 1 Chapman, 330 ft. each way from SE cor. NW, Sec. 10, Blk. 26, H.&G.N. Sur.	Drlg. 2,450 ft.
Empire G. & F. Co.'s No. 1 A. R. Clay, NE cor. Sec. 185, Blk. B-2	Drlg. 2,392 ft.
Eslick & McKinney's No. 1 Mrs. Hopkins, 330 ft. from NE, E½ NE, Sec. 84, Blk. B-2, H.&G.N. Sur.	S.D. 2,865 ft.
Sines & Reiger's, formerly Eslick et al's No. 1 Mrs. J. A. Hopkins, NW cor. W 80 ac. of SW, Sec. 84, Blk. B-2, H.&T.C. Sur.	Pull 6-in. csg. 3,206 ft.
Gulf Prod. Co.'s No. 4 Holmes-A, 990 ft. N and 330 ft. E of SW cor. W½ SE, Sec. 87, Blk. 3, I.&G.N. R.R. Sur.	Drlg. 3,050 ft.
Gardner, Collins et al's No. 1 Saunders, 330 ft. each way from NE cor. of S 49 ac. of W 100 ac., Sec. 3, B.&B. Sur.	10,100,000 ft. gas 2,526-46 ft.; drlg. 2,920 ft.
Gardner Bros. & Collins' No. 2 Saunders, 350 ft from N on center line of W 68 of W ½ of E ½ of J. G. Eustis Sur.	Location.
Magnolia Pet. Co.'s No. 3 W. Harrah, 330 ft. from NE cor. NW, Sec. 150, Blk. 3, I.&G.N. Sur.	Drlg. 3,100 ft.
Magnolia Pet. Co.'s No. 1 Gething, 530 ft. each way from SE SW, Sec. 14, Blk. A-9, H.&G.N. Sur.	Drlg. 1,780 ft.
Malone et al's No. 1 Taylor, 990 ft. S and E of NW cor. NW, Sec. 22, Blk. B-2, H.&G.N. Sur.	Drlg. 2,350 ft.
Marland Prod. Co.'s No. 1 Brown-Finley, 330 ft. S and W of NE cor. Sec. 32, Blk. B-2, H.&G.N.R.R. Sur.	Drlg., 2,640 ft.
McLain Oil Co.'s No. 1 Back, 1,000 ft. from W line and 330 ft. from N line, NW, Sec. 24, Blk. 25 H.&G.N. Sur.	Spud. and S.D.
Midwest O. & G. Co.'s No. 1 Bower-B, 1,650 ft. from E and 330 ft. from N lines, Sec. 93, Blk. B-2, H.&G.N. R.R. Sur.	Drlg. 460 ft.
Nabob Oil Co.'s No. 2 Morse, 660 ft. from W line and 330 ft. from S line SW, Sec. 67, Blk. 25, H.&G.N. R.R. Sur.	Cellar.
Operators Oil Co.'s No. 3 Jackson, 330 ft. S and 990 ft. E of NW cor. N½ of NE, Sec. 88, Blk. B-2, H.&G.N. R.R. Sur.	Drlg. 1,200 ft.
Parton & Holt's No. 1 Gething, 330 ft. each way from SE cor. NE, Sec. 14, Blk. A-9	S.D. 2,808 ft.
Phillips Pet. Co.'s No. 4 Johns, 330 ft. each way from NE cor. SE SW, Sec. 87, Blk. 3, I.&G.N. Sur.	Swbd. 60 bbls. 3,204-10 ft.
Phillips Pet. Co.'s No. 5 Johns, 330 ft. N and 990 ft. E of SW cor. SW, Sec. 87, Blk. 3, I.&G.N. Sur.	Rig.
Prairie O. & G. Co.'s No. 2 Reynolds, 330 ft. each way from NW cor. SE, Sec. 61, Blk. 3, I.&G.N. Sur.	Swabbed 40 bbls. 10 hours from G.W. 3,094-3,101 ft., to pump.
Purple Sage Oil Co.'s No. 2 E. B. Johnson	2,000,000 ft. gas; 200 ft. oil 2,870 ft.; shot with 510 qts. 2,775-2,-872 ft.; 400 ft. oil; C.O. 2,875 ft., to pump.
Republic Prod. Co.'s No. 1 G. H. Saunders, 330 ft. each way from SW cor. E½ NW cor. Sec. 4, Blk. 1, A.C.H.&B. Sur.	Drlg. in sidetracked hole 2,400 ft.
Schwald et al's No. 1 fee, 330 ft. each way from NE cor. E½ SW, Sec. 1, Blk. 1, A.C.H.&B. Sur.	Drlg. 2,505 ft.
Skelly Oil Co.'s No. 1 Saunders, 330 ft. from E line, 990 ft. from S line, SW, Sec. 4, Blk. 1, A.C.H.&B. Sur.	Fish. 2,475 ft.
Skelly Oil Co.'s No. 3 Saunders, 330 ft. from N line and 990 ft. from W line, SW cor. Sec. 4, Blk. 1, A.C.H.&B. Sur.	Swb. 10 bbls. 2,750-75, T.D., 2,910 ft., to d.d.
St. Clair Oil Co.'s No. 1 Dial, 330 ft. S and W of NE cor. of SE Sec. 10, Blk. 25, H.&G.N.R.R. Sur.	Location.
St. Clair Oil Co.'s No. 1 Rowe, Sec. 32, Blk. R	Drlg. 2,664 ft.
St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor., Sec. 35, W. R. Lee Sur.	Spudded and S.D.
Southern Pet. Exp. Co.'s No. 2 McConnell, 990 ft. from W line and 330 ft. from S line NW, Sec. 174, Blk. 3, I.&G.N. Sur.	Flow. 600 bbls. 22 hrs. 3,207-21 ft.
The Texas Co.'s No. 6 Davis, 330 ft. S and 1,650 ft. W of NE cor. of NW, Sec. 86, Blk. 3, I.&G.N.R.R. Sur.	Location.
The Texas Co.'s No. 5 A. Chapman, 1,138 ft. from W and 330 ft. from S lines, SE, Sec. 51, Blk. 25, H. &G.N. Sur.	Drlg. 1,922 ft.
The Texas Co.'s No. 5 Davis, 330 ft. S and W of NE cor. NW, Sec. 86, Blk. 3, I.&G.N. Sur.	Swb. 45 bbls. 17 hrs., G.W. 3.150-55 ft.
The Texas Co.'s No. 2 McLarty-B, at center of J. M. Rose Sur.	Location.
The Texas Co.'s No. 10 Saunders, 330 ft. N and W of SE cor. of W½ of J. G. Eustis Sur.	Location.
Travis et al's No. 1 J. S. Morse, SE NW SW, Sec. 68, Blk. 25, H.&G.N. Sur.	30,000,000 ft. gas 2,592-2,610 ft.; light spray oil 2,740-45 ft.; to deepen.

HEAVY DUTY



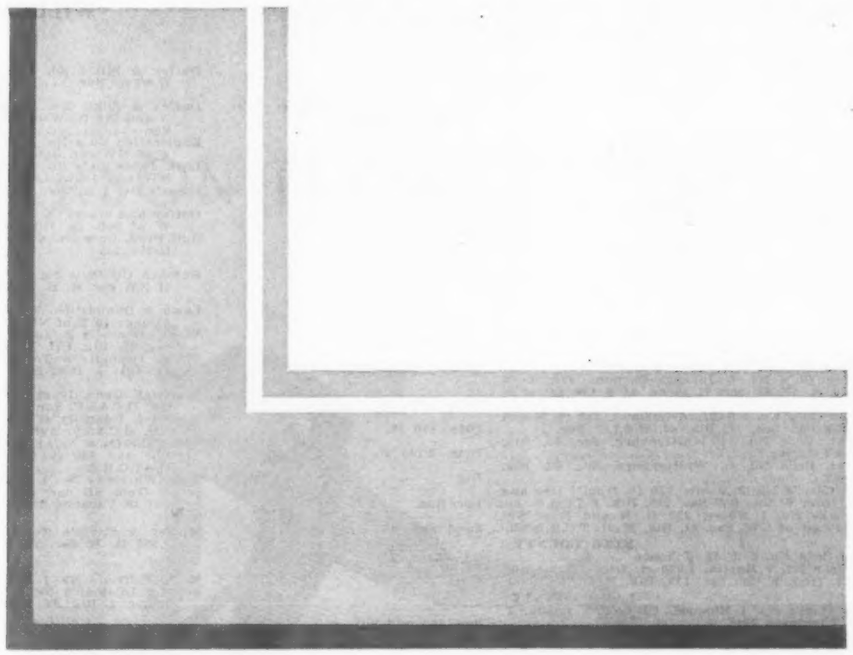
7¼"x 14" "Oilwell" Mud Hog Pump

911-D

OIL WELL SU

WORLD'S OLDEST AND LARGEST
MANUFACTURERS OF OIL FIELD EQUIPMENT

PITTSU



This pump will insure the operator an ample volume of mud for any operation at pressures far in excess of ordinary requirements.

Such features as oilbath lubrication, crank and pinion shafts mounted on roller bearings, heat treated helical gears and pinions, adjustable cross head, double piston rod stuffing box and alloy iron bifurcated water ends, make possible the greater working pressures and greater speed resulting in greater volume.

"Oilwell" pumps are made in sizes ranging from 6"x4"x6" up to 14"x7¼"x18" steam driven and from 4"x6" up to 7¼"x18" power driven.

OIL WELL SUPPLY CO.

PITTSBURGH, U.S.A.

BRANCH STORES IN ALL OIL FIELDS

Wilcox-Pampa Oil Co.'s No. 31 Worley Reynolds, 330 ft. N and E SW cor. SE SW, Sec. 61, Blk. 3, I.&G.N... Drlg. 2,910 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger County school lands; elevation 3,363 ft.; contract depth 5,000 ft. ..... S.D. 1,455 ft.

HARTLEY COUNTY

Amarillo Oil Co.'s No. 9 Lee Bivins "A," C NW, Sec. 6, Blk. 21 ..... 15,000,000 ft. gas 3,300-35 ft.; T.D. 3,601 ft.; deepen.

Canadian River Gas Co.'s No. 10 Burns-A, 660 ft. N and 660 ft. E, Sec. 18, Blk. 2, G.&M. Sur. ..... Rig.

HUTCHINSON COUNTY

Antelope Creek Oil Co.'s No. 3 Sanford, 330 ft. from N line and 330 ft. from W line of E½ S 160 ac. of Sec. 82, Blk. 46, H.&T.C. Sur. ..... Fish. 2,840 ft.

Dunnigan et al's No. 1 C. W. Hugenbyhl, 330 ft. from S line and 330 ft. from E line, N½, Sec. 4, Blk. T, W.N.G.R.R. Sur. ..... C.O. 2,145 ft.

Marland Prod. Co.'s No. 1 Johnson-C, 450 ft. S and W of NE cor. Sec. 5, Blk. 1, B.&B. Sur. ..... Spud.

Oil Operators Trust Co. and Marland's No. 2 J. M. Stanford B, Sec. 82, Blk. 46, H.&T.C. Sur. ..... S.D. 3,039 ft.

Phillips Pet. Co.'s No. 2 Jasper, 930 ft. from S line and 660 ft. from E line SE, Sec. 23, Blk. M-23, T.C. R.R. Sur. ..... Fishing 510 ft.

Phillips Pet. Co.'s No. 4 Johnson Bros.-Florence, 330 ft. N and E of SW cor. E½, Mary Whitely Sur. .. Drlg. 2,600 ft.

Phillips Pet. Co.'s No. 3 Johnson-Pulaski, 330 ft. N and W of SE cor. W½, Mary Whitely Sur. ..... Swb. 15 bbls. daily 2,840-69 ft.

Phillips Pet. Co.'s No. 5 Johnson-Barnum, 990 ft. N and 330 ft. W SE cor. E 80 ac. of S 160 ac. of N 400 ac., Sec. 64, Blk. 46, H.&T.C.R.R. Sur. ..... Drlg. 2,050 ft.

Phillips Pet. Co.'s No. 3 Sanford-Garland, 330 ft. N and E of SW cor. Sec. 77, Blk. 46, H.&T.C. Sur. ..... Drlg. 490 ft.

Phillips Pet. Co.'s No. 15 Whittenburg, Sec. 63, Blk. 46, H.&T.C. Sur. ..... Drlg. 2,100 ft.

Phillips Pet. Co.'s No. 16 Whittenburg, Sec. 63, Blk. 46, H.&T.C. Sur. ..... Rig.

The Texas Corp.'s No. 2 Moore, 990 ft. fromN line and 330 ft. from W line SW Sec. 125, Blk. 4, I.&G.N. Sur.. Location.

Timms et al's No. Moore, 330 ft. N and E of SW cor. S 40 ac. of NW, Sec. 21, Blk. M-21, T.C.R.R. Sur.. Spud and S.D.

KING COUNTY

The Texas Co.'s No. 1 J. H. Johnson ..... S.D. 4,300 ft.

Huff Oil Co.'s No. 1 Martin, 1,320 ft. from N line and 1,320 ft. from E line Sec. 171, Blk. F, H.&T.C. Sur... Rig.

LAMB COUNTY

Dan Freel et al's No. 1 Ellwood, CWL Sec. 9, Blk. T, T. A. Thompson Sur. ..... Spudded and S.D.

LIPSCOMB COUNTY

Brown et al's No. 1 Box T Ranch, SW NE Sec. 612, H.&T.C. Sur. ..... S.D. 3,128 ft.

Ruby Oil Co.'s No. 1 C. W. Jones, NE SW, Sec. 100 H.&T.C. Sur. ..... S.D. 4,433 ft. for 5-in. csg.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small show oil 1,133-40 ft.; sand; S.D. 4,000 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 2 Warrick-A, center S 160 acres Sec. 92, Blk. 46, H.&T.C. Sur. ..... Location.

Canadian Gas Co.'s No. 1 Kilgore-A, 2,716 ft. S and 2,695 ft. W of NE cor. Sec. 1, Eustis Sur. ..... Drlg. 1,000 ft.

Devonian Oil Co.'s No. 1 Sneed, 330 ft. N and 2,335 ft. W of SE cor. of S 160 ac. of N 320 ac., M. Robinson Sur. ..... Location.

Dixie Creek Oil Co.'s No. 1-A Sneed, Jr., 330 ft. N and W of SE cor. E½, Sec. 65, Blk. 3, G.M. Sur. ..... 400 ft. oil 3,305-15 ft., H.F.W. at 3,330 ft., to P.B.

Dixie Creek Oil Co.'s No. 4-A Sneed, Jr., 330 ft. S and W of NE cor. E½, Sec. 65, Blk. 3 ..... 10,000,000 ft. gas 2,835-55 ft.; 50 ft. oil 3,304-05 ft.; H.F.W. 3,-354 ft; P.B. to 3,336 ft; shot with 55 qts. 3,305-25 ft. and second shot 3,217-38 ft; C.O.

Fritch O. & G. Co.'s No. 1 Lee Burns, C NE 40 ac. of N 160 ac., Sec. 4, Geo. Mahan Sur. ..... Spudded and S.D.

McMan Oil & Gas Co.'s No. 2 Sneed, 2,260 ft. S and 990 ft. W of NW cor. J. W. Proctor Sur., located in M. Robinson Sur. ..... Drlg. 150 ft.

Phillips Pet. Co.'s No. 1 Burnett, 330 ft. each way from NE cor. NE, Sec. 192, Blk. 3-T, T.&N.O. Sur. .. Set. 8-in. 2,644 ft.

Phillips Pet. Co.'s No. 4 Sneed, 1,600 ft. S and 990 ft. W of NW cor. J. W. Proctor Sur.; located in M. Robinson Sur. ..... Rig.

Phillips Pet. Co.'s No. 1 Taylor, 330 ft. N and E of SW cor. of E½ of NW cor. Sec. 244, Blk. 3-T, T. &N.O. Sur. ..... Location.

MOTLEY COUNTY

Explth. Co.'s No. 1 Tillson ..... Drlg. 1,720 ft.

Explth. Co.'s No. 2 Matador Land & Cattle Co., C SW, Sec. 37, John Gibson Sur. ..... Fishing 4,700 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. 5-A ..... Formerly abd. at 5,240 ft.; small show 36 gravity oil 5,288-91 ft.; show oil brown sand 5,710-12 ft.; set whipstock to drill by tools 5,827 ft.

WHEELER COUNTY

Angus et al's No. 2 Morgan, C E½ NW NE, Sec. 93, Blk. 17, H.&G.N. Sur. ..... S.D. 1,175 ft. for pipe.

Arnold Oil Co. et al's No. 1 Ritchey, 420 ft. from E and 460 ft. from S lines of NW cor. Sec. 5, Blk. 24, H.&G.N. Sur. ..... S.D. 1,530 ft.

Byrens et al's No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H.&G.N. Sur. ..... S.D. 2,800 ft.

Clark et als' No. 4 Purcell, C SW of SW Sec. 51, Blk. 17, H.&G.N.R.R. Sur. ..... Location.

Edwards et al's No. 2 Trostle, C NW of NW Sec. 130, Blk. 23, H.&G.N. Sur. ..... Rig burned 1,235 ft.

Fain-McGaha and Humble's No. 1 Noel, 330 ft. each way from NE cor. S½ SE, Sec. 54, Blk. 24, H.& G.N. Sur. ..... Fishing 210 ft.

Gibson Oil Co.'s No. 6 Bentley, 330 ft. S and E of NW cor. SE of SE Sec. 42, Blk. 24, H.&G.N.R.R. Sur.. Drlg. 200 ft.

Hartell et al's No. 1 Burchman, C NW SE, Sec. 91, Blk. 17, H.&G.N. Sur. ..... S.D. 1,820 ft.

Johnson & Co.'s No. 1 Purcell, 430 ft. from N line and 570 ft. from W line NE, Sec. 50, Blk. 17, H.&G.N. Sur.. S.D. 990 ft.

Lone Star Co.'s No. 1 Hicks, C SW NE, Sec. 52, Blk. 17, H.&G.N. Sur. ..... Rig.

Lone Star Gas Co.'s No. 3 Jones, C NW NE, Sec. 1, Blk. 25, H.&G.N. Sur. ..... Drlg. 1,816 ft.

Lone Star Gas Co.'s No. 4 Jones, center of SE of NE Sec. 1, Blk. 24, H.&G.N. Sur. ..... Rig.

Lone Star Co.'s No. 1 Shelton, C NE SE, Sec. 22, Blk. 24, H.&G.N. Sur. ..... 40,000,000 ft. gas 1,840-1,901 ft.

Mudge Oil Co.'s No. 1 Hicks, C SW of SW Sec. 52, Blk. 17, H.&G.N.R.R. Sur. ..... Rig.

L. W. Rook's No. 1 M. Nelson, C SW NE, Sec. 5, Blk. 24, H.&G.N. Sur. ..... Drlg. 1,970 ft.

The Texas Co.'s No. 1 Gordon, 330 ft. N and 405 ft. W of SE cor. of NW Sec. 91, Blk. 17, H.&G.N.R.R. Sur. Drlg. 447 ft.

J. D. Whittington et al's No. 3 Williams-Laycock, 330 ft. N and E of SW cor. SW, Sec. 9, Blk. 27, H. &G.N.R.R. Sur. ..... Drlg. 1,990 ft.

L. W. Rook's No. 2 A. Smock, C SW SE, Sec. 5, Blk. 24, H.&G.N. Sur. ..... Rig.

Vaughn et al's No. 1 Woodley, C NE of NE Sec. 21, Blk. 24, H.&G.N. Sur. ..... Rig.

Wisch Kamper's No. 1 Adamson, C NE SE, Sec. 50, Blk. 17, H.&G.N.R.R. Sur. ..... Spud. and S.D.

Wisch Kamper's No. 1 Parsons, C NW NW, Sec. 53, Blk. 23, H. & G. N. Sur. ..... C.O. 1,950 ft.

Wisch Kamper's No. 2 Wisch-Kamper, 175 ft. N and 164 ft. E of SW cor. NE SW, Sec. 86, Blk. 23, H. &G.N. Sur. ..... Drlg. 1,427 ft.

Upham Gas Co.'s No. 1 Raybo, C S½ NW NW, Sec. 105, Blk. 23, H.&G.N. Sur. ..... Rig.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 48)

Duffey & Silk's No. 1 Noyes, C SE Sec. 19, Blk. 70, H.&T.C. Sur. ..... Show oil and water 1,625-31 drlg. ahead.

Duffey & Silk's No. 1 Lovelace and Lockett, 1,056 ft. N and 640 ft. W of SE cor. Sec. 66, Blk. 70, H.&T.C. Sur. ..... Shut down 650 ft.

Exploration Co.'s No. 2 Hartgrove, 900 ft. S and 985 ft. E of NW cor. Johann Scheuch Sur. No. 240 ..... Rig.

Loyd Jones Co.'s No. 1 Jones, 420 ft. S and 15 ft. E of NW cor. John G. Reh Sur. No. 1,878..... Drilled to 660 ft. and shut do

Posey's No. 1 Elvidge, C NW Sec. 39, H.&T.C.R.R. Sur.... Shut down 300 ft.

CRANE COUNTY

Duffey and others' No. 4 Cowden, 1,320 ft. S and 440 ft. W of Sec. 18, Blk. X, C.C.S.D.&R.G.N.G. ..... Cleaning out 2,428 ft.

Gulf Prod. Co.'s No. 6 Waddell, C NW NE Sec. 12, Blk. B-25 ..... Top salt 1,285 ft.; drlg. 2,00

CROCKETT COUNTY

Barbara Oil Co.'s No. 1 Cox, 237 ft. S and 1,190 ft. E of NW cor. R. B. Dickenson Sur. ..... Show gas 1,000 ft.; shut d 1,290 ft.; flowing water.

Lewis & Daniels' No. 1 Pecos River Bed, 19 yards S and 37 degrees E of NW cor. Sec. 33, Blk. 1, I.&G.N. Sur... Shut down 236 ft.

W. W. Donnelly & Young's No. 1 Shannon, SW SW SE Sec. 42, Blk. BB, T.C.R.A. Sur. ..... Shut down 1,719 ft.

W. W. Donnelly & Young's No. 1 Middlebuster, C. Sec. 11, Blk. 9, D.&S.E. Sur. ..... 7,000,000 ft. gas at 1,663 ft.; s down 1,690 ft.; small oil sh

Moncrief, Donnelly et al's No. 2 Todd, C Sec. 53, Blk. UV, G.C.&S.F. Sur. ..... Location.

Moncrief, Donnelly et al's No. 3 Todd, C Sec. 55, Blk. UV, G.C.&S.F. Sur. ..... Location.

Tidal Oil Co.'s No. 1 Weathered, 5,055 ft. SW of NE line and 330 ft. SE of NW line Sec. 30, Blk. 31, H.&T.C.R.R. ..... Location.

J. D. Wheeler's No. 1 State Land, 744 ft. S and 1,250 ft. E from SE cor. Sec. 73, Blk. 1, I.&G.N.R.R. Sur., but in Vacancy Strip ..... Shut down 337 ft.

CULBERSON COUNTY

Hickey & Stiver's No. 1 C. O. Finley, 660 ft. N and 1,980 ft. W Sec. 20, Blk. 82 ..... Hole full water; small oil sh 1,331 ft.; pipe set 1,418 ft.; d 1,700 ft.

W. S. Hillyer's No. 1 McGregor, C NW Sec. 14, Blk. 81.. Shut down 530 ft.

Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480ft. E Sec. 1, Blk. 97, Public School Land..... Rainbow 1,056 ft.; 300 ft subl water 1,725 ft.; shut down casing 1,767 ft.

DAWSON COUNTY

Magnolia Petroleum Co.'s No. 1 W. A. Jetter, C Sec. 1, Blk. 34, Twp. 4n ..... Top salt 1,650 ft.; top lime 1 ft.; set 10-in. casing 1,815 oil show 3,856 ft.; drlg. 4 ft.; 3.500 ft. salt water at 4 ft.; rainbow at 4,263 ft.; d 4,298 ft.

FISHER COUNTY

Bickerstaff et al's No. 1 McWhirter, 2,640 ft. E and 150 ft. N of SW cor. of Sec. 295, Blk. 2, H.&T.C. Sur. .... Shut down 2,000 ft. for orders

Cranfill & Reynolds' No. 1 Brown, 330 ft. S and E of NW cor. Sec. 4, W. E. Richardson Sur. ..... Drlg. 2,250 ft.

Cranfill & Reynolds' No. 2 Willingham, 1,980 ft. S and 2,310 ft. W of NE cor. Sec. 207, B.B.B.&C.R.R. Sur... Drlg. 375 ft.

Cranfill & Reynolds' No. 1 Fleming, 1,980 ft. S and 2,310 ft. E of NW cor. Sec. 207, B.B.B.&C.R.R. ..... Drlg. 1,460 ft.

Dunnegan Bros.' No. 1 T. Henry, 330 ft. N and E of SE cor. Sec. 21, George W. Burdett Sur. No. 322, but in Sec. 4, Robert Hibbitt Sur. No. 331..... Drlg. 1,675 ft.

Gilman-McMurray & French's No. 1 Cleveland, 781 ft. N and 1,336 ft. W of SE cor. Sec. 116, Blk. 2, H.&T.C. Sur. ..... Drlg. 685 ft.

Hucony Gas Co.'s No. 1 D. F. Maberry, 1,078 ft. S and 188 ft. W of NE cor. Elijah Bell Sur. No. 327..... Hole full salt water 2,735 ft.; t lime 2,960 ft.; pay 2,964-70 f show oil and water; set 5-i 3,195 ft.; fishing 3,220 ft.

Landreth Prod. Corp.'s No. 1 Cooper, 440 ft. SE of NE cor. NW Sec. 115, Blk. 1, H.&T.C. Sur. ..... Underreaming 1,705 ft.

Mesa Oil Co.'s No. 1 Griffin, 849 ft. N and 465 ft. E of NE cor. Sec. 20, School Land..... Rig.

Roeser & Pendleton's No. 1 Haught, 440 ft. S and 1,320 ft. E of NW cor. of SW of Sec. 191, B.B.B.&C.R.R. Sur. ..... Location.

Texas-Phillips' No. 1 Hall, 330 ft. N and W of SE cor. Sec. 6, Blk. 20..... Moving in material.

Thompson et al's No. 1 Newman, 1,320 ft. N and 660 ft. W of SE cor. of SW Sec. 44, Blk. 1, H.&T.B. Sur..... Top lime 2,810 ft.; good show 2,843-45 ft.

GAINES COUNTY

Pure Oil Co.'s No. 1 A. A. Williamson, 1,650 ft. S and 330 ft. W of NE cor. Sec. 110, Blk. H, D.&W.R.R.... Top salt 2,333 ft.; drlg. 3,064 f

GARZA COUNTY

Emerald Oil Co.'s No. 4 J. M. Boren, 330 ft. S and W NE cor. Sec. 136, Blk. 5, H.&G.N. Sur. ..... Drlg. 1,255 ft.

GLASSCOCK COUNTY

Chas. Daniel et al's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor. Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur... Spudded and shut down.

Gibson & Johnson's No. 1 Mann, C NW Sec. 6, Blk. 33, T.&P. Sur. ..... Shut down 2,210 ft.

R. R. Penn's No. 1 Hughes-Johnson, C NW Sec. 45, Blk. 30, W.&N.W. Sur. ..... Drlg. 1,575 ft.

Marland Prod. Co. et al's No. 7-A Settles, 2,310 ft. S and W of NE cor. Sec. 158, Blk. 29, W.&N.W. Sur. ... Location.

Meriweather Oil Co.'s No. 2 McDowell, 1,492 ft. N and 150 ft. E of SE Sec. 35, Blk. 34, Twp. 2s, T.&P. Sur... Hole full water 2,665 ft.; set casing 2,700 ft.; drlg. 2,720 ft.

Sprague Oil Co.'s No. 4 Roberts, 1,650 ft. S and 330 ft. E of NW cor. Sec. 156, Blk. 29 ..... Cemented 6-in 3,009 ft.

World Oil Co.'s No. 1-C McDowell, 1,650 ft. S and 2,310 ft. W of NE cor. Sec. 21, Blk. 34..... Shut down 750 ft.

White Eagle Oil & Ref. Co.'s No. 1 Dunbar, C of NW Sec. 46, Blk. 34, Twp. 4s, T.&P.R.R. Sur. ..... Shut down 2,210 ft.

HOWARD COUNTY

American Maracaibo Co.'s No. 1 Settles-D, 330 ft. S and 1,650 ft. E of NW cor. Sec. 158, Blk. 29, W.&N.W. R.R. Sur. ..... Rigging up.

American Maracaibo Co.'s No. 4 Settles-C, 1,373 ft. S and 3,023 ft. E of NW cor. Sec. 6, Blk. 32, Twp. 2s.... Drlg. 1,233 ft.

American Maracaibo Co.'s No. 5 Settles-C, 330 ft. S and W of NE cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. ..... Location.

Bristow & Merrick's No. 10 Hooks, 660 ft. S and 2,440 ft. E of NW cor. Sec. 140, Blk. 29, W.&N.W.R.R. Sur... Drlg. 1,767 ft.

California Co.'s No. 1 Settles, 2,310 ft. N and W of SE Sec. 158, Blk. 28, W.&N.W. Sur..... Drlg. 2,475 ft.

Cosden & Co.'s No. 2 Roberts-C, 1,540 ft. N and 990 ft. E of SE cor. Sec. 128, Blk. 29, W.&N.W.R.R. Sur..... Drlg. 1,316 ft.

Coyle & Concord Oil Co.'s No. 6 D. Roberts, 1,650 ft. S and 150 ft. W of NE cor. Sec. 156, Blk. 29, W.&N.W. R.R. Sur. ..... Rig.

Cranfill & Reynolds' No. 1 Kloh-Rumsey, 353 ft. N and 150 ft. W of SE cor. Sec. 3, Blk. 32, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 480 ft.

Empire Gas & Fuel Co.'s No. 2 Clay, 785 ft. N and 1,570 ft. W of SE cor. Sec. 127, Blk. 29, W.&N.W.R.R. Sur... Drlg. 1,052 ft.

F. H. E. Oil Co. et al's No. 7-B Dora Roberts, 330 ft. S and E of NW Sec. 137, Blk. 29 ..... Swabbing 2,677 ft.

F. H. E Oil Co.'s No. 11-B Dora Roberts, 1,700 ft. S and 2,310 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W. Sur. ..... Shut down 259 ft.

F. H. E Oil Co.'s No. 5-D Dora Roberts, 2,310 ft. S and 1,650 ft. E of NW cor. Sec. 136, Blk. 29..... Set 6-in. casing 2,930 ft.; shu down.

Green Oil & Ref. Co.'s No. 6 H. R. Clay, 1,315 ft. N and 1,070 ft. W of SE cor. Sec. 127, Blk. 29, W.&N.W.R.R. Sur. ..... Set 6⅝-in. casing 1,535 ft.; clean ing out 1,820 ft.

Green Oil Co. et al's No. 1 J. W. Furrh, C SW cor. Sec. 11, Blk. 31 ..... Top lime 2,100 ft.; set 6-in. casin 2,845 ft.; shut down 3,592 ft.

THE GUIBERSON TUBING CATCHER

Comes swiftly into play

With lightning speed, the Guiberson Tubing Catcher comes into action and engages the casing walls—halting the fall of a string of tubing before it has dropped three inches. This operation is sure to take place, saving the well owner the loss of his tubing, resulting in lost production, a fishing job, and sometimes loss of the well entirely.

Dove-tail tracks guide the slips instantly and accurately to the casing walls—also preserve alignment of slips to insure 100% gripping surface at exact right angles to the falling tubing. The strong spring operates with or without fluid in the hole. The heavy striker weight overcomes the retarding action of mud or paraffin. A Guiberson Catcher at the foot of a string of tubing is the most positive prevention against tubing accidents that can be found.

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"BETTER BE SAFE THAN SORRY"

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GUIBERSON

BETTER BE SAFE THAN SORRY

Green et al's No. 1 Slaughter, C SW Sec. 32, Blk. 31, Twp. 3n, T.&P.R.R. Sur. — Rig.

Group 1 Oil Co. & Marland Prod. Co.'s No. 1 Overton, 1,650 ft. N and 2,310 ft. W of SE cor. Sec. 5, Blk. 32, Twp. 2s, T.&P. Sur. — Drlg. 186 ft.

Group No. 1 & Marland Prod. Co.'s No. 5 Settles, 2,310 ft. S and 330 ft. E of NW cor. Sec. 133, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 1,664 ft.

Group No. 1 & Marland Prod. Co.'s No. 6 Settles, 2,310 ft. N, 330 ft. E of SW Sec. 133, Blk. 29 — Drlg 1,346 ft.

L. C. Harrison et al's No. 1 G. M. Podge Est., SE cor. Sec. 9, Blk. 30, Twp. 1s, T.&P. Sur. — Hole full salt water 1,475-1,505 ft.; top lime 1,825 ft.; show oil 2,972-74 ft.; hole full fluid 3,257 ft.; total depth 3,257 ft. Plugged back to 3,000 ft. to shoot.

Howard County Oil Corp.'s No. 1 Kloh, 990 ft. S and 1,170 ft. E of NW cor. Sec. 5, Blk. 32, Twp. 2s, T.&P.R.R. Sur. — Junked hole 1,005 ft.; skidded derrick 160 ft. west. Shut down 2,236 ft.

Hyer & Yates' No. 3 Clay, 990 ft. S and 2,310 ft. W of NE cor. Sec. 165, Blk. 29, W.&N.W. Sur. — Drlg. 1,540 ft.

Laurel & Cosden's No. 8 Dora Roberts, 330 ft. W and 2,310 ft. N of SE cor. Sec. 136, Blk. 29 — Cem. 6⅝-in. casing 2,938 ft.

Humble Oil & Ref. Co.'s No. 1 H. R. Clay, 990 ft. S and 330 ft. E of NW cor. Sec. 138, Blk. 29, W.&N.W. Sur. — Drlg. 300 ft.

Humble Oil & Ref. Co.'s No. 2 Clay, 330 ft. N and 2,310 ft. E of SW cor. Sec. 138, Blk. 29, W.&N.W. R.R. Sur. — Drlg. 839 ft.

Laurel & Cosden's No. 9 Roberts, 1,650 ft. N and 330 ft. W of SE cor. Sec. 136, Blk. 29, W.&N.W. Sur. — Run 6⅝-in. casing 2,950 ft.

Laurel Oil & Gas Co. and Cosden's No. 10 Dora Roberts, 990 ft. N and 330 ft. W of SE cor. Sec. 136, Blk. 29, W.&N.W. Sur. — Cemented 8¼-in casing 1,580 ft.

Magnolia Pet. Co.'s No. 13 Dora Roberts, 2,440 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. — Rigging up standard tools 2,927 ft.; shut down.

Magnolia Pet. Co.'s No. 16-D Dora Roberts, 990 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. — Testing 2,550-60 ft.; shut down.

Magnolia Pet. Co.'s No. 18 D. Roberts, 405 ft. N and 330 ft. E of SW cor. Sec. 135, Blk. 29, W.&N.W. R.R. — Rig.

Marland Prod. Co.'s No. 12 Clay-A, 250 ft. S and 1,533 ft. W of NE cor. Sec. 139, Blk. 29, W.&N.W. Sur. — Drlg. 1,150 ft.

Marland Oil Co.'s No. 3-C Chalk, 660 ft. S and 2,440 ft. W of NE cor. Sec. 140, Blk. 29, W.&N.W. Sur. — Drlg. 1,770 ft.

Marland Prod. Co.'s No. 3 Clay-F, 250 ft. S and 660 ft. W of NE cor. Sec. 138, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 1,448 ft.

Marland Prod. Co.'s No. 3 Clay-G, 786 ft. N and 1,570 ft. E of SW cor. Sec. 126, Blk. 29, W.&N.W.R.R. Sur. — Location.

Marland-Texon Prod. Co.'s No. 1 Eason, 2,638 ft. S and E of SW cor. Sec. 124, Blk. 29, W.&N.W. Sur. — Swabbing 150 bbls. daily 2,200-60 ft.; shot with 200 qts. at 2,190-2,240 ft.; cleaning out.

Marland Oil Co.'s No. 8-A Settles, 2,310 ft. N and E of SW cor. Sec. 158, Blk. 29, W.&N.W. Sur. — Location.

Midwest Exp. Co.'s No. 2 Clay-C, 330 ft. N and 1,650 ft. W of SE cor. Sec. 138, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 900 ft.

Midwest Exploration Co.'s No. 3 Clay-C, 330 ft. N and 990 ft. W of SE cor. Sec. 138, Blk. 29, W.&N.W.R.R. Sur. — Location.

Marland Prod. Co.'s No. 3 Clay, Lease G, 785 ft. N and 1,570 ft. W of SW Sec. 126, Blk. 29, W.&N.W.R.R. Sur. — Spudding.

Moody Oil Corp.'s No. 13 D. Roberts, 2,310 ft. S and 2,260 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W.R.R. Sur. — Location.

Moody Oil Corp.'s No. 10 Roberts-E, 2,310 ft. S and 280 ft. W of NE cor. Sec. 136, Blk. 29, W.&N.W.R.R. Sur. — Location.

Merrick & Bristow's No. 8 Dora Roberts, 990 ft. N and 330 ft. E of SW cor. Sec. 137, Blk. 29, W.&N.W. Sur. — Drlg. Cemented 8¼-in. 1,929 ft.

Merrick & Lamb's No. 7 Clay, 250 ft. N and 1,535 ft. W of SE cor. Sec. 126, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 920 ft.

Midwest Exploration Co.'s No. 3 Clay-C, 990 ft. W and 330 ft. N. of SE cor. Sec. 138, Blk. 29 — Spudding.

Phillips Pet. Co.'s No. 1 J. Thomas, 330 ft. N and W of SE cor. Sec. 13, Blk. 33, Twp. 1n, T.&P. Sur. — Topped lime 3,030 ft.; hole full sulphur water; underreaming 2,925 ft.

Pure Oil Co.'s No. 11 Chalk, 2,310 ft. N and 1,060 ft. W of SE cor. Sec. 125, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 763 ft.

Schermerhorn Oil Co.'s No. 4 Roberts-A, 2,304 ft. S and 2,306 ft. W of NE cor. Sec. 137, Blk. 29, W.&N.W. R.R. Sur. — Drlg. 1,280 ft.

Schermerhorn Oil Co.'s No. 5 Roberts-A, 1,650 ft. S and 2,250 ft. W of NE cor. of Sec. 137, Blk. 29, W.&N.W. Sur. — Location.

Shell Pet. Corp.'s No. 1 Settles, 990 ft. E and 330 ft. N of SW cor. Sec. 135, Blk. 29 — Cemented 8¼-in. casing 2,141 ft.; swabbing 2,438 ft.

Sun Oil Co.'s No. 6 Settles, 915 ft. N and 330 ft. W of SE cor. Sec. 135, Blk. 29, W.&N.W. Sur. — Drlg. 2,380 ft.

Taylor-Link Oil Co.'s No. 2 Kloh-Rumsey, 1,884 ft. E and 150 ft. N of SW cor. Sec. 3, Blk. 32, Twp. 2s, T.&P.R.R. Sur. — Drlg. 1,926 ft.

Ward Oil Co.'s No. 3 Dora Roberts, 2,310 ft. N and E of SW cor. Sec. 137, Blk. 29 — Drlg. 2,893 ft.

Ward Oil Co.'s No. 5 Roberts, 1,650 ft. N and 330 ft. E of SW cor. Sec. 137, Blk. 29 — Drlg. 2,195 ft.

HUDSPETH COUNTY

American Land Co.'s No. 1 Lockhart & Roseborough, C SE Sec. 5, School Blk. 21 — Total depth 260 ft.; shut down; tools moved off.

California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor. Sec. 18, Blk. E — Total depth 352 ft.; shut down, crooked hole; trying to straighten hole.

Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. — Straightreaming 2,700 ft.; total depth 2,740 ft.; fishing pipe.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 — Hole full water 2,945 ft.; underreaming 8¼-in. casing at 2,840 ft.; trying to get water shut off; shut down 3,140 ft.; trying to pull casing.

IRION COUNTY

Fuhrman Pet. Co.'s No. 1 J. O. Suggs, Lease 1, C SE Sec. 3,024, Blk. 24, H.&T.C. Sur. — Rig.

Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 2, C SW Sec. 3,009, Blk. 24, H.&T.C. Sur. — Location.

Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 3, C SE Sec. 3,009, Blk. 24, H.&T.C. Sur. — Set 12½-in. casing 406 ft.

Kimbrough & Flinchbaugh's No. 1 Tankersley, 160 ft. S and 200 ft. W of NE cor. Sec. 712, Ford Willig Sur. — Spudding.

Kimbrough & Tuel's No. 1 J. M. Nutt, 1,920 ft. S. 200 ft. E of NW cor. Sec. 5, Gonzales Co. School Land — Set 6-in. casing 1,360 ft.; show oil and gas; shut down 1,400 ft.

Mertzon Interests' No. 1 Harlan Horney, 2,440 ft. N and 150 ft. from W lines of Sec. Z, Blk. 3, H.&T.C. Sur. — Shut down 1,226 ft; 10 bbls. in 14 hours.

Signal Oil Co.'s No. 2 Suggs, 5,240 ft. from N line and 996 ft. from W line, Sec. 23, Blk. 27, H.&T.C. Sur. — Drlg. 350 ft.

Sun Oil Co.'s No. 1 Tankersley, 2,128 ft. N and 1,173 ft. E of SW cor. Sec. 8, G.C.&S.F. Sur. — Location.

F. E. Webb et al's No. 1 J. M. Nutt — Drlg. 2,982 ft.

Wesley West et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, H.&T.C. Sur. — Top pay 3,368 ft.; swabbed 35 bbls. oil and 40 bbls. water; 35.8 gravity oil; show oil 3,480-83 ft.; drlg. gray lime 5,545 ft.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means, 1,622 ft. N line, 600 ft W line Sec. 345, H.&T.C. Sur. — Show gas 3,271 ft., black lime; slight show gas; drlg. 3,790 ft.

JONES COUNTY

Anna Belle Oil Co.'s No. 1 Bickley, 330 ft. S and E of NW cor. SE NE Sec. 50, Blk. 18, T.&P. Sur. — Rig.

E. P. Campbell et al's No. 2-C Herndon, 330 ft. N and E of SW cor. NW Sec. 6, M.E.P.&P. Sur. — Drlg. 1,920 ft.

Cosden & Co.'s No. 1 Brown, 200 ft. N and 300 ft. W of SE cor. J. H. Grayson Sur. — Drlg. 1,300 ft.

Cosden & Herbert Oil Co.'s No. 1 Bickley, 320 ft. N and 319 ft. E of SW cor. S half NW Sec. 50, Blk. 18, T.&P. Sur. — Rig.

Cosden & Herbert Oil Co.'s No. 6 Bickley, 330 ft. S and 319 ft. E of NW cor. S half NW of Sec. 50, Blk. 18, T.&P. Sur. — Drlg. 885 ft.

Grisham & Hunter's No. 1 Tiner, 311 ft. N and 330 ft. W of SE cor. Gabriel Zumwalt Sur. — Drlg. 1,550 ft.

Marland Prod. Co.'s No. 7 Mason, 330 ft. S and 990 ft. W of NE cor. S half NE Sec. 18, Blk. 19, T.&P. Sur. — Spud.

Mid-Sun Oil Corp.'s No. 1 George Hoehn, 660 ft. N and W of SE cor. SE 40 ac. of N 160 ac. of W 320 ac. of A. Ira Sur. No. 162 — Fishing 2,385 ft.

McClanahan et al's No. 1 Hall, 150 ft. N and E of SW cor. of Hall 220-acre tract, C.&M.R.R. Co. Sur. — Drlg. 1,005 ft.

McGinley Corp.'s No. 1 Whittemore, 660 ft. N and W of SE cor. SE NE Sec. 39, B.B.B.&C. — Shut down 225 ft.

McMan Oil & Gas Co.'s No. 2 Bickley, 330 ft. N and E of SW cor. of NE Sec. 50, Blk. 18, T.&P.R.R. Sur. — Location.

McNeeley et al's No. 1 Roscoe Bland, 1,175 ft. N and 240 ft. W of SE cor. Subdivision 20, A-164, DeWitt Co. School Land — Spudded and shut down.

Phillips Pet. Co.'s No. 1 Winters, Sec. 19, Blk. 19, T.&P. Sur. — Cleaning out 2,900 ft.

Phillips Pet. Co.'s No. 6 Mason, 330 ft. S and 300 ft. W of NE cor. W half of NE Sec. 18, Blk. 19, T.&P. Sur. — Drlg. 275 ft.

Roberts Oil Corp.'s No. 8 Grayson, 2,083 ft. N and 330 ft. W of SE cor. of their lease out of Sec. 13, Blk. 19, T.&P. — Shut down 2,090 ft.

Roeser-Pendleton & Landreth Prod. Co.'s No. 4 Grayson-A, 315 ft. S and 990 ft. W of NE cor. their lease out of Sec. 13, Blk. 19, T.&P.R.R. Sur. — Location.

Sedwick O. & G. Co.'s No. 1 Routh, 1,250 ft. N, 2,500 ft. W SE cor. 299-acre tract, Austin & Williams Sur. 355-A-7. — Spud.

Sedgwick Oil & Gas Co.'s No. 1 Brown, 660 ft. N and 1,320 ft. E of SW cor. Sec. 9, Blk. 1, T.&N.O. Sur. — Drlg. 200 ft.

Snowden & McSweeney's No. 6 Bickley, 330 ft. N and 319 ft. E of SW cor. N half Sec. 50, Blk. 18, T.&P. Sur. — Drlg. 900 ft.

U. L. Tomberlin's No. 1 Horn, 1,980 ft. N and 660 ft. E of SW cor. of 502 ac. of Penney Sur. A-283 — Spudded and shut down.

LOVING COUNTY

Lockhart & Co.'s No. 1 Hazell, 2,792 ft. SW of NE line and 660 ft. NW of SE line Sec. 84, Blk. 33, H.&T.C.R.R. Sur. — Rig.

Lockhart & Co.'s No. 1 L. Lepp, 330 ft. each way from S cor. of Sec. 3, Blk. 2, W.&N.W. Sur. — Cem. 10-in. 578 ft.

Lockhart & Co.'s No. 1 Hubbard, 2,640 ft. NE and 660 ft. NW Sec. 84, Blk. 33, H.&T.C.R.R. Sur. — Drlg. 475 ft.

Lockhart & Co.'s No. 2 Hubbard, 1,660 ft. from NE line and 330 ft. from SE line of Sec. 83, Blk. 33, H.&T.C.R.R. — Location.

LYNN COUNTY

Miller et al's No. 1 May, 500 ft. N of C of S L of Sec. 10, Blk. 7, E.L.R.R. Sur. — Spudded and shut down.

MENARD COUNTY

Carpenter & Robbins' No. 1 Kothman, NW cor. SW SW Sec. 22 — Shut down 600 ft.

C. C. Sorrels & Jackson's No. 1 F. Wilhelm, C NE Sec. 6, Blk. C. Brooks & Burleson Sur. — Setting 6-in. 1,920 ft.

MIDLAND COUNTY

Shoup et al's No. 1 Roy Parks, C NW Sec. 34, Blk. 41, Twp. 2s, T.&P. Sur. — Top salt 1,700 ft.; cem. 8⅝-in. casing 2,770 ft.; show oil 3,330 ft.; shut down 4,980 ft.

MITCHELL COUNTY

California Co.'s No. 6 Foster, Lease 1, 990 ft. N and 2,310 ft. E of SW cor. Sec. 6, Blk. 29, Twp. 1s, T.&P. Sur. — Tested 35 bbls. 2,573-2,616 ft.; drlg. 2,908 ft.

E. P. Campbell et al's No. 1 Pond, 1,065 ft. W, 660 ft. N of SE cor. Sec. 79, Blk. 27, T.&P. Sur. — Show oil 2,660-65 ft.; shut down 3,003 ft.

Magnolia Pet. Co.'s No. 6 Foster, 1,980 ft. N and E of SW cor. Sec. 17, Blk. 29, Twp. 1s, T.&P.R.R. Sur. — Drlg. 190 ft.

Simms Pet. Co.'s No. 1 Elwood, C SE of Sec. 29, Blk. 18, S.P.R.R. Sur. — Drlg. 350 ft.

Teas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. — Four bailers salt water per hr. 3,405 ft.; drlg. 3,640 ft.

NOLAN COUNTY

L. G. Bradstreet et al's No. 1 Kuteman, C NW Sec. 95, Blk. X, T.&P. Sur. — Rig.

C. M. Root et al's No. 1 Simpson, 330 ft. S and W of NE cor. SE Sec. 33, Blk. 19, T.&P. Sur. — Drlg. 2,535 ft.

W. F. O. & K. Co.'s No. 1 Allyn, 600 ft. E and 1,720 ft. N of SW cor. Sec. 48, Blk. 20, T.&P. Sur. — Underreaming 6⅝-in. casing 2,740 ft.; drlg 2,840 ft.

PECOS COUNTY

Alexander & Lyle's No. 1 Myrtle Sellman, C SW SE Sec. 20, Blk. Z, T.S.Ry. Sur. — Top salt 814 ft.; top lime 1,602 ft.; 3,400,000 ft. gas from 1,611-26 ft.; spraying very little oil; sulphur water 1,652 ft.; shut down 1,655 ft.

M. H. Black's No. 1 P.V.O. Co., 2,310 ft. from SE and 1,650 ft. from SW lines Sec. 22, Blk. 10, H.&G.N. Sur. — Location.

Buell & Hagan's No. 1 University-B, 330 ft. N and 2,310 ft. W of SE cor. Sec. 36, Blk. 18, University Land — Location.

California Co.'s No. 1 Smith, Lease 4, 1,010 ft. from N and E line Sec. 15, Blk. 194, G.C.&S.F. Sur. — Shut down 1,786 ft.

Crowley's No. 1 Heiner, 2,490 ft. each way from N and E lines Sec. 589, G.C.&S.F.R.R. Sur. — Location.

The California Co.'s No. 3 Smith, Lease 1, 1,789 ft. from N and 1,005 ft. from W lines, Sec. 21, Blk. 194, G.C.&S.F.R.R. Sur. — Shut down 1,115 ft.

California Co.'s No. 7 Sm'th, Lease 1, 998 ft. from S and 1,738 ft. from W lines, Sec. 23, Blk. 194, G.C.&S.F.R.R. Sur. — Shut down 1,010 ft.

M. C. Dibble & Hale's No. 1 Bonebrake, Sec. 115, Blk. 8, H.&G.W. Sur., elev. 2,555 ft. — Top lime 1,305 ft.; set 6-in. casing 1,610 ft.; pulling 8¼-in. casing; total depth 2,004 ft.

Ditto Oil Co.'s No. 1 J. M. Montgomery, Sec. 104, Blk. 331, A-16,387 — Shut down 660 ft.

Doran & McGee's No. 1 P.V.O. Co., 150 ft. from SE and SW lines Sec. 22, Blk. 10, H.&G.N. Sur. — Location.

Gulf Prod. Co.'s No. 16 Smith-B, 990 ft. S and 990 ft. E of NW cor. Sec. 22, Blk. 194, G.C.&S.F.R.R. Sur. — Rig.

Marland Prod. Co.'s No. 1 Blakeslee, 330 ft. N of middle of S line Sec. 100, Blk. 8, H.&G.N. — Fishing 540 ft.

Matador Oil Co.'s No. 3 Smith, 2,310 ft. from N and 990 ft. from E lines, Sec. 24, Blk. 194, G.C.&S.F.R.R. Sur. — Moving in machine.

Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. — Shut down 1,010 ft.

McCarty Oil Co.'s No. 1 A. A. Gray, 1,520 ft. from S and 150 ft. from W lines Sec. 591, Abst. 3,010 — Drlg. 860 ft.

Mid-Kansas Oil & Gas Co.'s No. 12-C Yates, 811 ft. from N and 871 ft. from W lines Sec. 60, Blk. 1, I.&G.N. R.R. Sur. — Top pay 1,160 ft.; drlg. 1,345 ft.; flowing 2,500 bbls. hr.

Mid-Kansas Oil & Gas Co.'s No. 8 Yates-H, 797 ft. N and 3,528 ft. E of SW cor. Sec. 32, Blk. 194, G.C.&S.F. R.R. Sur. — Fishing 415 ft.

Mid-Kansas Oil & Gas Co.'s No. 28 Yates, 811 ft. N and 871 ft. E of NW cor. Sec. 60, Blk. 1, I.&G.N. Sur. — Drlg. 685 ft.

Pecos Valley Oil Co.'s No. 2 fee, 1,620 ft. from SW and 1,320 ft. from NW Sec. 22, Blk. 10, H.&G.N.R.R. Sur. — Drlg. 1,385 ft.; top salt 1,197 ft.

Perrin et al's No. 1 Eaton, 150 ft. each way from NE and NW lines Sec. 27, Blk. 3, H.&T.C. Sur. — Location.

Phillips Pet. Co.'s No. 1 J. L. Nutt, 2,310 ft. from W and 330 ft. from S lines Sec. 9, Blk. 125, T.&St.L. Sur. — Drlg. 2,000 ft.

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Phillips Pet. Co.'s No. 1 Ramsey, 990 ft. from N and E lines, Sec. 17, Blk. 194, G.C.&S.F. Sur. ..... Drlg. 110 ft.
Stein & McGee's No. 1 Louis Paterson, 150 ft. SE of NW line, 150 ft. NE of SW Sec. 34, Blk. 10, H.&G.N. ..... Location.
B. J. Spikes' No. 1 George Brown ..... Shut down 700 ft.
Schumaker et al's No. 1 Williams et al, 330 ft. N of middle of S line Sec. 1, Blk. 117, G.C.&S.F. ..... Shut down 492 ft.
Southern C. O. P. Co.'s No. 1 Scharbauer Cattle Co., SW cor. Sec. 21, Blk. 134, T.&S.L. Sur. ..... Show gas 1,455-60 ft.; water 3,175 ft.; drlg. 3,475 ft.
Talbot & Dittman's No. 1 Unsicker, 1,320 ft. from E and 660 ft. from S lines, Sec. 25, Blk. 10, H.&G.N. ..... Shut down 1,365 ft.
Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 ..... Top lime 1,155 ft.; drlg. 4,170 ft.
Trees Oil Co.'s No. 1 Trees, 330 ft. from N and E L of Sec. 63, Blk. 8 ..... Location.
World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 45, Twp. 3, T.P.R.R. Sur., elev. 2,810 ft. ..... Shut down 3,105 ft.

PRESIDIO COUNTY

Eastland Oil Co.'s No. 1 Smith, C Sec. 17, Certificate 463, or Blk. 351, G.C.&S.F.R.R. ..... Spudded and shut down.
Phillips Pet. Co., Empire G. & F. Co., Delmar Oil Co. and C. E. Miller's No. 1 Tootle Est., C NE Sec. 75, Blk. 3, D.&P.R.R. Sur. ..... Show wet gas 1,270 ft.; shut down 2,200 ft.
L. C. Brite's No. 1 Lee, Sec. 50, Blk. 12, G.H.&S.A. Sur., center of section ..... Shut down 4,152 ft.; show oil 4,130 ft.; set 6-in. casing 4,152 ft.; drlg. 5,058 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor. Sec. 1, Blk. 2, University Land .. Rig (cable tools).
Big Lake Oil Co.'s No. 2-C University Land, 2,109 ft. N and 926 ft. W of SE cor. Sec. 1, Blk. 2, University Land ..... Building rotary rig.
Big Lake Oil Co.'s No. 159 University, 2,090 ft. N and 920 ft. W SE cor. Sec. 1, Blk. 2 ..... Location.
Big Lake Oil Co.'s No. 160 University, 1,320 ft. N and 1,060 ft. W of SE cor. Sec. 2, Blk. 2 ..... Location.
Big Lake Oil Co.'s No. 161 University, 1,720 ft. N and 1,720 ft. E of SW cor. Sec. 1, Blk. 2 ..... Location.
Big Lake Oil Co.'s No. 162 University, 920 ft. S and 1,720 ft. W of NE cor. Sec. 36, Blk. 1 ..... Location.
Big Lake Oil Co.'s 163 University, 1,930 ft. S and 1,720 ft. W of NE cor. Sec. 1, Blk. 2 ..... Rig.
Big Lake Oil Co.'s No. 164 University, 2,240 ft. N and 400 ft. E of SW Sec. 12, Blk. 2 ..... Rig.
Big Lake Oil Co.'s No. 165 University, 2,240 ft. N and E of SW cor. Sec. 12, Blk. 2 ..... Location.
Big Lake Oil Co.'s No. 166 University, 920 ft. S and 2,240 ft. E of NW cor. Sec. 12, Blk. 2 ..... Location.
The California Co.'s No. 5 University, 2,310 ft. from N and E lines Sec. 16, Blk. 7, University Land ..... Top salt 1,280 ft.; drlg. 2,560 ft.
Texon O. & L. Co.'s No. 1-B University Group 1 ..... Top pay 6,250 ft.; hole full of oil; well made two small heads; oil sand 8,482 ft.; total depth 8,525 ft.; flowing 1,820 bbls. daily.

REEVES COUNTY

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. ..... Total depth 2,900 ft.; shut down.
Southern Crude O. P. Co.'s No. 1 Kloh-Rumsey, 2,210 ft. N and W SE cor. Sec. 23, Blk. 51 ..... Rig.
David R. Thompson's No. 1 A. A. Eddins ..... Fishing casing 5,658 ft.
Robert Penn et al's No. 1 Bowles, 2,310 ft. SW of NE cor. Sec. 36, Blk. 50, Twp. 8, T.&P.R.R. Sur. ..... Top salt 1,725 ft.; drlg. 2,000 ft.
Lee O. White et al's No. 1 Kloh-Rumsey, 660 ft. S and E of NW cor. Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. ..... Rigging up standard tools.

RUNNELS COUNTY

Boyce et al's No. 1 E. O. Lange, 2,300 ft. S and 6,900 ft. W of NE cor. Austin & Williams Sur. No. 262 ..... Shut down 1,350 ft.
Foster et al's No. 1 Currie, 1,866 ft. SE of NW line, 335 ft. SW of NE L Gray Carroll Sur. ..... Shut down 360 ft.
R. D. Hamilton et al's No. 1 A. Spill, 1,320 ft. S and W of NE cor. A. Spill 891 acres, out of Thomas R. Webb Sur. 358 ..... Shut down 100 ft.
Marland Prod. Co.'s No. 1 August Herring, 330 ft. S and 1,650 ft. W of NE cor. Sec. 39, E.T.R.R. Co. Sur. ..... Location.
McLean et al's No. 1 G. W. Clayton, 150 ft. N line, 270 ft. from W line Sec. 135, E.T.R.R. ..... Shut down 1,185 ft.
Nourse & Tilton's No. 1 R. A. Stokes, 200 ft. S 600 ft. E of NW cor. G.C.&S.F. Sur. No. 2 ..... Drlg. 2,490 ft.
R. B. Summers et al's No. 1 J. W. Reese, M. J. Parramore Sur. 26 ..... Shut down 1,650 ft.
Union Oil Co. of Nevada's No. 1 W. E. Allen, 1,000 ft. N and W of SE cor. Sec. 1, H.E.&W.T. Sur. ..... Drlg. 2,560 ft.

SCHLEICHER COUNTY

J. F. Long and O. C. Long's No. 1 W. H. Williams, NE cor. Sec. 28, H.E.&W.T.R.R. Sur. ..... Shut down 275 ft.

SCURRY COUNTY

I. B. Mims et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Spudded and shut down.
G. E. Dieckman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Shut down 1,810 ft.

STERLING COUNTY

F. & G. Oil Co.'s No. 1 W. L. Foster, C SE Sec. 20, Blk. 12, S.P.R.R. Sur. ..... Show oil 1,296-98 ft. and 1,356-58 ft.; drlg. 1,907 ft.
George L. Miller's No. 1 Foster, 3,690 ft. S and 1,397 ft. W of NE cor. Sec. 4, Blk. 31, T.&P. Sur. ..... Moving in material.

SUTTON COUNTY

Phillips Pet. Co.'s No. 1 A. G. Holman, 2,310 ft. S and 330 ft. W NE cor. Sec. 25, G.C.S.D.&N.G.R.R. Sur. ..... Drlg. by tools 5,770 ft.
L. G. Priest's No. 1 Allison, 1,320 ft. N and E of SW cor. Sec. 52, Blk. A, T.&P. Sur. ..... Shut down 150 ft.
Southern C. O. P. Co.'s No. 1 Allison, 2,310 ft. S and 320 ft. W of NE Sec. 41, Blk. K, G.H.&S.A. Sur. ..... Drlg. 1,275 ft.

TAYLOR COUNTY

Burnham et al's No. 1 A.M.Y.X. ..... Drlg. 2,232 ft.
Grisham-Hunter Corp.'s No. 1 Campbell, 330 ft. S and E of NW cor. SW Sec. 65, Blk. 19, T.&P. Sur. ..... Drlg. 1,210 ft.
Mid-Continent Oil & Gas Co.'s No. 1 Taylor, 990 ft. W 215 ft. N SE cor. 100-ac. tract, Sec. 18, Guadalupe School Land Sur. ..... 300 ft. oil 2,384-87 ft.; 700 ft. oil 2,445-50 ft. to swab.
Wentz Oil Corp.'s No. 1 Armour, 375 ft. N and 330 ft. W of SE cor. W half Sec. 16, Blk. 6, S.P.R.R. Sur. ..... Drlg. 515 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T.R.R. Sur. ..... Spudded and shut down.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Blk. D-7, E.L.&R.R. Sur. ..... Shut down 1,749 ft.
Mrs. J. B. McPhee's No. 1 Sam Belt, C Sec. 78, Blk. D-7, E.L.&R.R. Sur. ..... Location.
Milham Exploration Co.'s No. 1 Bassett, Sec. 76, Blk. Y, W. E. Robertson Sur. ..... Cem. 6⅝-in. casing 3,986 ft.; total depth 4,630 ft.; waiting on cable tools.
Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 150 ft.

TERRY COUNTY

Kingsland O. & P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. ..... Fishing bailer 5,080 ft.

TOM GREEN COUNTY

Collins et al's No. 1 Jones, CSL Sec. 646, Shaffer Sur. ... Shut down 1,800 ft.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Ringer ..... Shut down 1,920 ft.
F. P. Green et al's No. 1 fee, 575 ft. from N and 1,450 ft. from W lines Sec. 165, District 11, S.P.R.R. Co. Sur. ..... Shut down 1,931 ft.
McLaughlin & Ridge's No. 1 R. Q. Holder, 3,140 ft. N and 80 ft. W SE cor. J. P. Parker Sur. (3,000-ft. test) ..... Show gas 1,757-59 ft.; shut down 3,005 ft.; hole full water 2,986 ft.

UPTON COUNTY

Champlin Oil & Ref. Co.'s No. 4 J. F. Lane, 990 ft. from S, 330 ft. from W line of SE Sec. 2, G.C.&S.F. Sur. .. Top pay 1,940 ft.; pumping 40 bbls. oil and 470 bbls. water; shut down 1,979 ft.
Wentz Oil Co.'s No. 5 Shirk, 2,310 ft. N and 1,650 ft. W of SE cor. Sec. 35, Blk. 1, M.-K.-T.R.R. Sur. ..... Rig.

YOAKUM COUNTY

Weekley Oil Corp.'s No. 1 Knight, C NW Sec. 791, Blk. D, John Gibson Sur. ..... Spudded and shut down.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 20, Blk. 4, L.&G.N. Sur., elev. 1,175 ft. ..... Shut down 4,600 feet.
O. O. Owens' No. 1 Mills, Sec. 125, Blk. 1, L.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft.; tested 125,750 ft. gas; reset 8-in. 2,511 ft.; shut down 4,210 ft.
Producers Oil Co. et al's No. 1 Everett Bros., 2,310 ft. S and 330 ft. E of NW cor. Sec. 40, Blk. DB, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 2,048 ft.
Dyar Bros. et al's No. 1 Wilson, 6,830 ft. N NE cor. Sec. 1, T.&P. Sur., thence 1,680 ft. E Sec. 115, Blk. E, G.C.&S.F. Sur. ..... Show oil and gas 1,053 ft.; drlg. 2,620 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE Sur. 47, Blk. Y .. Set 15½-in. casing 767 ft.; set 10-in. casing 1,510 ft.; drlg. 3,270 ft.

WARD COUNTY

E. B. Lovelace et al's No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 162, Blk. 34, H.&T.C.R.R. ..... Spudding and shut down; to resume work.
Rector Oil Co.'s No. 1 Johnson, 1,150 ft. NW, 5,160 ft. NE Sec. 10, Blk. 32, H.&T.C. ..... Top salt 745 ft.; total depth 2,551 ft.; straightreaming 2,541 ft.

WINKLER COUNTY

Amerada Pet. Corp.'s No. 3 Daugherty, NW cor. NE SE Sec. 3, Blk. 74 ..... Top lime 2,812 ft.; drlg. 3,017 ft.
American Maracaibo Co.'s No. 2 Hendricks-B, 1,980 ft. N and 1,650 ft. E of SW cor. Sec. 28, Blk. B-5 ..... Location.
Atlantic Prod. Co.'s No. 4 Hendricks, SW W half NE Sec. 44, Blk. 26 ..... Drlg. 2,715 ft.
V. T. Bolin et al's No. 2 Brown, 2,000 ft. S and W of NE cor. Sec. 4, Blk. B-5, Public School Land ..... Shut down 210 ft. water.
Barnsdall Oil Corp.'s No. 1 Tobe Morton, 330 ft. N and E of SW cor. Sec. 26, Blk. B-12 ..... Oil show 3,070 ft.; set pipe 3,128 ft.; preparing to abandon 3,358 ft.
Barnsdall Oil Corp.'s No. 2 Tobe Morton, 1,650 ft. N and 330 ft. E of SW cor. Sec. 26, Blk. B-12 ..... Cemented 8¼-in. 2,758 ft.
Barnsdall Oil Corp.'s No. 3 Tobe Morton, 990 ft. N and 330 ft. E of SW cor. Sec. 26, Blk. B-12 ..... Cellar.
Empire Gas & Fuel Co.'s No. 3 Daugherty, 330 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. 74 ..... Top lime 2,774 ft.; cem. 9-in. casing 2,781 ft.; set 6-in. casing 3,125 ft.; standardizing 3,140 ft.
Empire Gas & Fuel Co.'s No. 1-B Daugherty, 2,310 ft. S and 990 ft. W of NE cor. Sec. 3, Blk. 74 ..... Top lime 2,823 ft.; oil and gas show at 3,165 ft.; shut down 3,232 ft.
Gulf Prod. Co.'s No. 3 Cowden, 1,310 ft. N, 330 ft. E of SW of their 240-ac. tract, Sec. 3, Blk. B-12 ..... Top salt 1,300 ft.; drlg. lime 2,666 ft.
Gulf Prod. Co.'s No. 4 Cowden, 495 ft. N and 330 ft. E of SW cor. of 240-ac. lease, Sec. 3, Blk. B-12 ..... Drlg. 614 ft.
Gulf Prod. Co.'s No. 2 Hendricks, 1,330 ft. N and 330 ft. W of SE cor. NW Sec. 44, Blk. 26, School Land .. Top lime 2,837 ft.; running 8¼-in.
Humble Oil & Ref. Co.'s No. 4 Hendricks-C, 2,200 ft. N and 330 ft. E of SW cor. Sec. 10, Blk. B-12 ..... Drlg. 1,707 ft.
Humble Oil & Ref. Co.'s No. 5 Hendricks-C, 2,200 ft. N and 2,310 ft. E of SW cor. Sec. 10, Blk. B-12 ..... Drlg. 1,250 ft.
Humble Oil & Ref. Co.'s No. 6 Hendricks-C, 1,320 ft. N and 2,310 ft. E of SW cor. Sec. 10, Blk. B-12 ..... Drlg. 850 ft.
Humble Oil & Ref. Co.'s No. 7 Hendricks-C, 440 ft. S and 990 ft. E of NW Sec. 10, Blk. B-12 ..... Cemented 10-in 190 ft.
Humble Oil & Ref. Co.'s No. 8 Hendricks-C, 440 ft. S and 1,650 ft. E of NW Sec. 10, Blk. B-12 ..... Drlg. 875 ft.
Humble O. & R. Co.'s No. 9 Hendricks-C, Lease No. 2, 1,320 ft. N and 330 ft. E of SW cor. Sec. 10, Blk. B-12 ..... Location.
Independent Oil & Gas Co.'s No. 3-B Hendricks, NW W half SE Sec. 44, Blk. 26 ..... Shut down 528 ft.
Magnolia Pet. Co.'s No. 1 Scarborough, 2,310 ft. S and 990 ft. E Sec. 1, Blk. C-22 ..... Top salt 1,122 ft.; gas show 2,840-45 ft.; flowed 128 bbls. daily last 7 days.
Marland Oil Co.'s No. 2 Tobe Morton, 990 ft. N and 330 ft. W of SE cor. Sec. 27, Blk. B-12 ..... Top pay 2,840 ft.; drlg. 2,925 ft.; 1,400 ft. oil.
Prairie Oil & Gas Co.'s No. 5 Cowden, 1,320 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. B-12, School Land .. Cem. 8¼-in. casing 2,498 ft.; top lime 2,450 ft.; top pay 2,829 ft.; total depth 3,140 ft.; 995 bbls. per hour shut in.
Prairie Oil & Gas Co.'s No. 6 Cowden, 440 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. B-12, School Land ..... Drlg. 700 ft.
Prairie Oil & Gas Co.'s No. 1 Scarborough, 990 ft. N and 1,650 ft. W of SE cor. Sec. 1, Blk. C-22 ..... Cellar.
Pure Oil Co.'s No. 1 Hendricks, NE SW Sec. 44, Blk. 26 .. Set 12½-in. casing 896 ft.; drlg. 1,800 ft.
Republic Prod. Co.'s No. 7-A Grisham-Hunter, 1,650 ft. N and E of SW cor. Sec. 45, Blk. 25, School Land .. Drlg. 850 ft.
Shell Pet. Co.'s No. 5 Scarborough, 330 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. C-22 ..... Location.
Skelly Oil Co.'s No. 1 Leck, 440 ft. N and 330 ft. E of SW cor. Sec. 22, Blk. 26, School Land ..... Rig.
Skelly Oil Co.'s No. 1 Morton, 2,310 ft. N and 165 ft. W of SE cor. Sec. 27, Blk. B-12, School Land Sur. ..... Cellar.
Skelly Oil Co.'s No. 2 Hendricks-C, 1,320 ft. N and 2,310 ft. W of SE cor. Sec. 10, Blk. B-12 ..... Derrick.
Simms Oil Co. and Southwest O. P. Co.'s No. 1 George Sealey, 2,434 ft. S and 330 ft. W of NE cor. Sec. 50, Blk. F ..... Top lime 2,676 ft.; drlg 2,705 ft.
Southern Crude O. P. Co.'s No. 6 Hendricks T-67-3-A, 990 ft. S and 1,650 ft. W of NE cor. Sec. 4, Blk. B-12 ..... Location.
Southern Crude O. P. Co.'s No. 5 Hendricks T-67-F, 330 ft. N and 990 ft. W of SE cor. Sec. 33, Blk. B-5, School Land ..... Location.
Simms Pet. Co. et al's No. 2 Sealey, 2,434 ft. S and 990 ft. W of NE cor. Sec. 50, G.M.M.&A. Sur. ..... Rotary rig.
Southern C. O. P. Co. and Westbrook Thompson's No. 4 Hendricks T-88-B, 330 ft. S and 1,320 ft. E NW cor. Sec. 4, Blk. B-12, Public School Land ..... Top lime 2,721 ft.; drlg. 2,842 ft.
Southern Crude O. P. Co.'s No. 2 Hendricks T-88-Q, 440 ft. S and 330 ft. E of NW Sec. 27, Blk. 26, School Land ..... Drlg. 370 ft.
Southern Crude O. P. Co.'s No. 1 Hendricks, T-88-CX, 440 ft. N and 330 ft. W of SE cor. Sec. 21, Blk. 26, School Land ..... Drlg. 212 ft.
Southern Crude O. P. Co.'s No. 4 Hendricks T-88-J, 440 ft. S and 1,320 ft. W of NE Sec. 9, Blk. B-12, School Land ..... Location.
Southern Crude O. P. Co.'s No. 5 Hendricks, 1,320 ft. N and 330 ft. W of SE cor. Sec. 9, Blk. 26, School Land ..... Location.
Southern C. O. P. Co. and Westbrook-Thompson's No. 3 Hendricks T-88-C, 2,310 ft. N and W of SE cor. Sec. 35, Blk. B-5 ..... Cem. 8¼-in. casing 2,290 ft.; rigging up standard tools; drlg. 2,885 ft.; spray 75 bbls. oil, 10 bbls. water daily, with 5,000,000 ft. gas.
Southern C. O. P. Co.'s No. 6 Hendricks T-88-D, 440 ft. N and 1,320 ft. W of SE cor. Sec. 4, Blk. B-12 ..... Drlg. 1,810 ft.
Southern C. O. P. Co.'s No. 3 Hendricks T-89-J, 2,200 ft. N and 330 ft. W of SE cor. Sec. 9, Blk. B-12, School Land ..... Drlg. 454 ft.
Texas Canadian Oil Co.'s No. 1 Kloh-Rumsey, 1,320 ft. N and E of SW cor. Sec. 35, Blk. 46, T.&P.R.R. Sur. .. Rigging up standard tools.
Texon Oil & Land Co.'s No. 6 Grisham & Hunter-B, 1,320 ft. N and 990 ft. E of SW cor. Sec. 45, Blk. 26 .. Rigging up rotary.
Warner-Quinlan Co.'s No. 1 Daugherty, 2,310 ft. S and E of NW cor. Sec. 3, Blk. 74, Public School Land ... Estimated 60 bbls. per hour and 70,000,000 ft. gas; shut down 3,105 ft.; show gas 2,998 ft.

FIELD METHODS OF CONTROLLING WATER

(Continued from Page 40)

Field where gas is being returned to the sand at pressures as high as 1,500 pounds per square inch. It is reported that edge water is being held back by gas pressure and that any cessation of this practice is immediately reflected by a more rapid water encroachment.

Belated efforts to control the encroachment of water in the Seminole district, Oklahoma, by pinching in and applying back pressure on wells after the gas pressure had been dissipated have in some cases resulted disastrously because there was not enough pressure on the sand to hold the water back. To be most effective, such methods should be applied early in the life of a field by all of the operators.

Pressure control methods are reported to have been successfully applied in Russia[4] under the unit system of operating oil pools imposed by the Russian Government. Under this system the permissible rate of lowering the gas pressure in a field is prescribed by the Government. Gas pressure is said to be zealously conserved with heavy penalties for its too rapid dissipation.

Multiple Choke System

A multiple choke system which proved advantageous in Mexico and which has been used in this country where the chokers are not too rapidly cut away by sand consists of a series of small size pipe chokers connecting the top of the flow string to the lead line. Each choker pipe is equipped with a valve which insures both convenience and a wide range of adjustment on large wells. A typical installation of this kind on a large well in the Los Maranjos-Tepetate Field consisted of 31 three-eighths-inch chokers spaced 8 inches apart, each equipped with its individual valve. The three-eighth-inch chokers connected two parallel 4-inch lines spaced 2 feet apart. One of these 4-inch lines was the top of the flow string, the other was the lead line. A system of this kind in the absence of too much loose sand should be highly advantageous where it is necessary to frequently adjust the flow of a well to meet the sensitive critical conditions that govern its most advantageous flow. It is believed that this system allows a finer and more convenient adjustment than either the flow line bean or gate valve or the usual Christmas tree hook-ups.

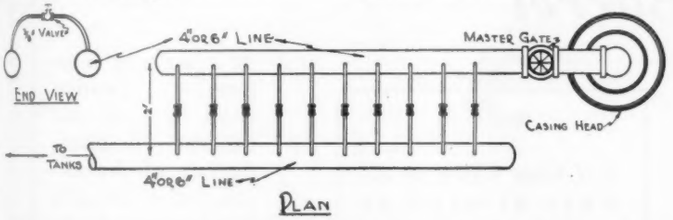


Figure 2—Diagrammatic sketch illustrating one type of multiple choker system used in Mexico.

Bottom Hole Plugging

Where bottom water or edge water finds its way into the wells through the lower part of a sand, it is often possible to reduce the water production and increase the oil production by bottom hole plugging. Under favorable conditions the method may yield a permanent shut off against bottom water but in dealing with edge water it is usually a last resort yielding only temporary relief against the advancing water. Bottom hole plugging can not take the place of holding water back by gas pressure. It is, however, a good repair measure when a well has been drilled into bottom water or when the reduction of gas pressure has allowed edge water to reach the wells and whenever the advance of the water can no longer be prevented.

One large company reports that it has increased its daily production from 500 to 1,500 bbls. of clean oil in one Oklahoma field by bottom hole plugging and casing off top water.

[4]Strigeoff, Prof. John N. Personal communication. Also see "Russian System of Field Development" The Oil and Gas Journal, April 5, 1928, page 67.

Methods of bottom hole plugging and the results obtained in different fields have been described in many reports and papers by Bureau of Mines engineers.

The following notes upon bottom hole plugging are quoted after Ambrose in United States Bureau of Mines Bulletin 195:

"Remarkable results were accomplished by the producers in the Cushing Field, Oklahoma, where they, in co-operation with A. A. Hammer and B. H. Scott, of the Bureau of Mines, successfully cemented off bottom water. After a careful study it was decided that water was coming from bottom. The water was shut off by the use of cement. The following statement indicates the results accomplished on 146 wells: Before cementing, the yield of oil was 412 bbls. per day, and of water 7,520 bbls.; after cementing, the yield of oil rose to 4,716 bbls. a day, and that of water dropped to 628 bbls., an increase of 4,304 bbls. of oil and a decrease of 6,892 bbls. of water. Not counting the decreased cost in lifting less water, the value of the additional oil recovered in a year, at $2.50 a barrel, may be estimated as 4,304 times 365 times $2.50, or $3,927,400. The production, of course, would not continue at the same rate, but even if the savings were decreased by 50 per cent they would still amount to almost $2,000,000 in a year.

"In this work the correcting of water trouble in one well shut off the water in a well located about 1,300 feet distant. This adjoining well previously made 20 bbls. of oil per day and a large quantity of water, but after the neighboring well had been repaired the second well came back, making 600 bbls. of oil per day.

"Of course, there are many areas where the most detailed underground study and mechanical work can not entirely prevent water trouble, but it has been shown time and again that such work followed by corrective measures improves water conditions and in certain instances has prevented the flooding of the sands. It is only good business to spend money for such work when one considers the amount of good that may be accomplished by a comparatively small expenditure. Certainly such a destructive agent as underground water deserves special attention.

"The prime necessity of mastering the underground water problem is, of course, to prevent water entrapping the major portion of the oil still underground. On the other hand, even if this point were entirely disregarded, there are sufficient reasons to warrant a study of water problems and subsequent repair work. Water is objectionable because its presence in appreciable amounts means:

"1. The ultimate loss of thousands of barrels of oil which may be trapped underground.

"2. Loss of casinghead gas.

"3. Increased lifting cost, as wells producing water cost more to pump, and in such wells the life of the tubing, pump and sucker rods is shorter, and there is an additional cost for the replacement of corroded pipe and fittings.

"4. The possibility of water flooding the sands and driving the oil to a neighboring property.

"5. The forming of emulsion, which necessitates expensive dehydrating plants to separate the oil and water.

"The effect upon production of an encroaching edgewater is shown in Figure 1. The rapid decline of oil upon the appearance of water is plainly shown in the figure. As the flow channels are opened, the quantity of water generally increases. In many wells, the water will reach some set production, such as 250 bbls. a day, and produce steadily at that rate. Very often the quantity of water may be limited by the pump—that is, a certain size pump will handle a limited amount of water. The operator should not think he is pumping out all the water that comes in, for much of it may be working back into the oil sands and doing damage.

"An oil sand flooded with water does not lend itself to future recovery by means of compressed air or other processes; furthermore, there is a loss of production during the various shutdowns for changing worn out pumps and for pulling rods."

Results obtained in the Powell Field, Navarro County, Texas, have been described by Hill and Sutton.*

After describing the plugging off of bottom water, these engineers say:

"Another type of repair work is illustrated by plugging back wells on the Texas-Magnolia, I. T. Kent lease. This lease is favorably located in the central part of the field between the 2,460-foot and 2,520-foot contour lines. The repair work consisted in plugging off edge water in the bottom of the sand. The first plugging work attempted was completed in March, 1925. The results indicated that the production could be increased by continued plugging operations on other wells. During the balance of 1925 eight wells were cemented by this company, and to May, 1926, three additional wells have been cemented.

"As a result of cementing the daily lease production was increased from 719 bbls. in June, 1925, to a maximum of 1,540 bbls. in August, 1925. The daily production as of April 1, 1925, for the average well previous to cementing was 56 bbls. of oil and 67 bbls. of water. These figures are given to indicate the production of the lease at the time plugging was commenced.

The results of plugging operations on this lease are very interesting when it is realized that of the 16 jobs completed, 15 of them have been by the dump bailer method with the liner not removed. The plugging operations from June, 1925, to April, 1926, resulted in an estimated net increase of 112,000 bbls.

"The production decline curve of the tract and the projected curve that should have resulted had plugging not been resorted to, are shown in Fig. 3.

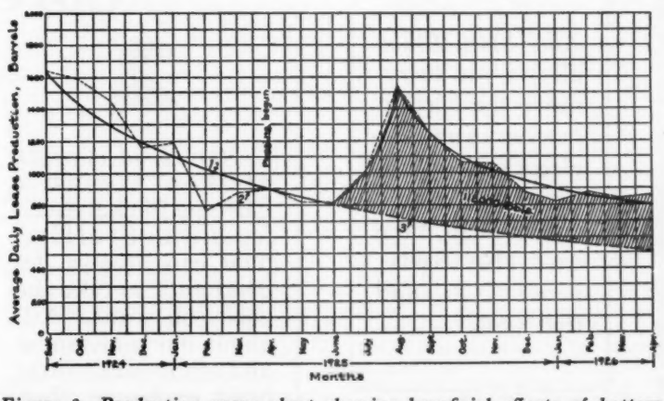


Figure 3—Production curve chart showing beneficial effects of bottom hole plugging in Powell Field, Texas. (After Hill and Sutton.)

"A third lease, the Texas-Fleming, has been chosen to show the results obtained by cementing off the bottom water on an edge lease situated between the 2,480-foot and 2,540-foot contour lines. The lowest contour (2,540 feet) is only 40 feet above the 2,580-foot contour line, which approximately established the production limit of the field.

"Since May, 1924, The Texas Company has cemented 9 of the 12 wells on the tract, several of them two or three times. An analysis of the production figures indicates that they have been well repaid for their work in increased production alone, without considering the reduction of water.

"The estimated net increase in production due to plugging on this lease was 83,000 bbls. This figure is based on estimated and actual oil gauges for the individual wells from December 31, 1923, to April 1, 1926, which figures checked the pipe line runs within 5 per cent. The increased production for the wells plugged is estimated for the period from cementing to April 1, 1926.

"The probable reason for increased production derived from cementing back is briefly stated as follows:

"Generally a rapid decline in oil production immediately follows the appearance of water in large amounts and particularly when such water has free access to the well. This would indicate that the quantity of water produced was limited only by the capacity of the equipment, whereas after plugging, although the actual quantity produced in many cases is still large, the working head is reduced sufficiently to allow more oil to enter the well.

"Therefore, although a plug may not completely exclude water from the well, if it obstructs the channels to such an extent as to allow the pumping equipment to reduce the working head, it materially benefits the well."

Some of the Bureau of Mines publications that describe oil field water problems and the beneficial results of bottom hole plugging are listed as follows:

Methods of Shutting off Water in Oil and Gas Wells by F. B. Tough, United States Bureau of Mines Bulletin 163, 1918.

Report of Operations, Rocky Mountain Petroleum Association in Co-operation with the United States Bureau of Mines by F. B. Tough and others, 1921.

Underground Conditions in Oil Fields by A. W. Ambrose, United States Bureau of Mines Bulletin 195, 1921.

Water Problems in the Northern Part of the Cushing Field, Creek County, Oklahoma, by D. P. Wardwell and others. United States Bureau of Mines Engineering Report, 1927.

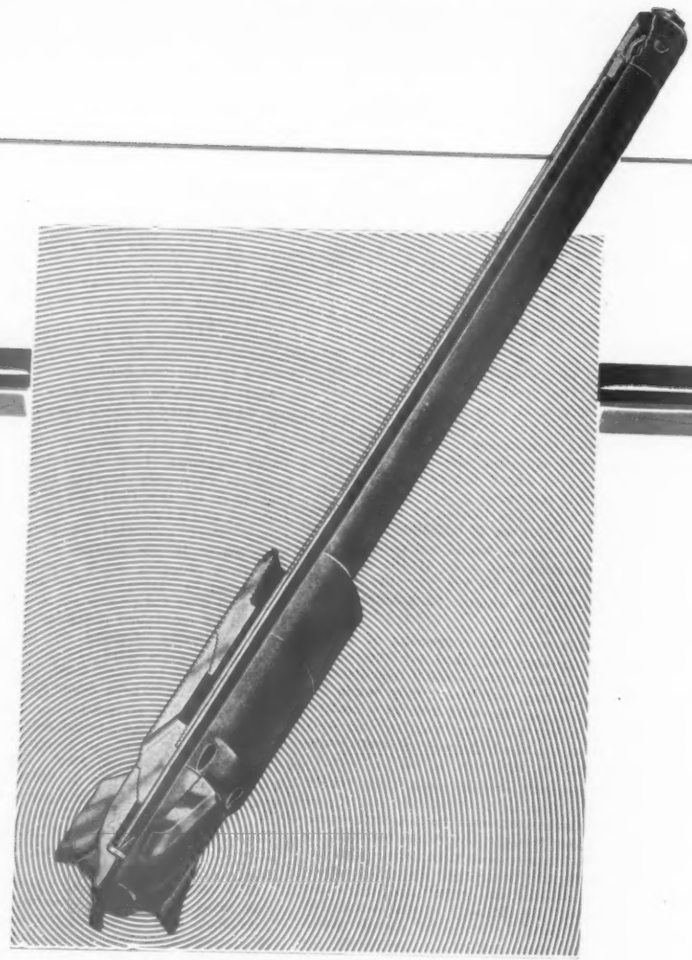
Petroleum Engineering in Wortham Oil Field, Limestone and Freestone Counties, Texas, by H. B. Hill and Chase E. Sutton, United States Bureau of Mines Engineering Report, 1927.

Engineering Study of the Texhoma-Gose Pool, Archer County, Texas, by Chase E. Sutton, Carol J. Wakenhut and H. B. Hill, United States Bureau of Mines Engineering Report, 1928.

Production and Development Problems in the Powell Oil Field, Navarro County, Texas, by H. B. Hill and Chase E. Sutton, United States Bureau of Mines Bulletin 284, 1928.

Other phases of field methods of water control will be described in succeeding papers.

[*]Hill, H. B., and Chase E. Sutton. Summarized Engineering Report on the Powell Field, Navarro County, Texas, with Special Reference to Water Problems and Corrective Work. Petroleum Development and Technology in 1926, American Institute of Mining and Metallurgical Engineers in 1926. Also see Production and Development Problems in the Powell Oil Field, Navarro County, Texas, United States Bureau of Mines Bulletin 284, 1928.



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COLOMBIA SEEKING ROYALTIES ON BASIS OF REFINED PRODUCTS

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Feb. 11.—The government of Colombia is having a practical demonstration of the folly of overproduction of oil, providing a lesson that may prove of interest to every oil-producing nation of South America.

The Republic of Colombia has an enormous interest in royalties on oil production, but during the past two years the price of oil has been so depressed Colombian officials decided to exercise their option in delaying the time when they would receive their royalty payments, hoping for a better price. This has proved a forlorn hope and the government is now discussing the language of its contracts with foreign and domestic oil companies with the hope that it may take its royalty in the form of refined products of oil in whole or in part.

The attitude of owners of royalty oil has generally favored as great production activities as possble even when they resulted in smaller returns in cash. Now that the Republic of Colombia has come to realize that its interests are bound up with the interest of the oil-producing companies and that a reasonable price for crude oil is as important to owners of royalty as to producers, better co-operation is expected by some of the oil companies.

De Mares Royalties

Oil men in this country have recently received information regarding the agreement arrived at by the government of Colombia and the Tropical Oil Co. with respect to the participation due Colombia by reason of the petroleum exploitation of the De Mares concession between July 1, 1926, and June 30, 1928.

The Colombian government has now elected to receive royalties on petroleum produced under the De Mares concession for the two-year period indicated and the Tropical Oil Co. agreed to pay within 24 hours after signing of this agreement the sum of $2,621,240.32 as the price of 3,008,061.5 bbls. of crude petroleum production on which the state is entitled to royalty.

In fixing the price of this oil the government has accepted the declaration of the Tropical company that it cost 65 centavos for transportation for each barrel from the points of production to the port of Mamonel. During the second six months of 1926 the price agreed upon was $1.20 a barrel. During 1927 it was 87 cents, and during the first half of 1928 the price dropped to 70 cents a barrel. It is well understood this depression in price, amounting to 50 cents a barrel, is the result of excess production, largely chargeable to Venezuela, but, of course, contributed to by excessive production in the United States and elsewhere.

The long delay in the payment of the royalty in the hope that there might be a better price is not to be considered as a precedent. This method of making the present payment cover two years, it is stipulated, shall not apply to payments in future.

The government contended that by its interpretation of Clause 5 of the contract of August 5, 1919, it should have the right from July 1, 1926, to June 30, 1928, as well as in the future, to exact as its royalty payment the value of the refined products instead of 10 per cent royalty of crude produced. The government claims the right to submit this question to the court.

Issue Before Courts

The Tropical Oil Co., operating this concession, did not accept this interpretation of Clause 5. Neither the government nor the company in going to court abandons any right it has possessed in the past but merely permits a decision of the dispute by a judicial procedure. It is agreed that should the courts uphold the oil company the payment of royalty based on the price of crude oil shall be a total liquidation of the indebtedness. The government's contention that the royalty should be based on the price of refined oil was first raised August 31, 1928. Prior to that time it is understood the Tropical Oil Co. had never been called upon to question its right to pay royalty upon a basis of crude oil.

From Colombian correspondence it is understood the government raised this question only as a result of criticism to which the government has been subjected for not having taken its royalty payments as they became due. Hope for an increased price proved a total disappointment and delay after delay only piled up the resentment of opposing politicians who insisted the money should have gone into the treasury and made available for public uses. There seems to be no public criticism that the government has not received ample royalty in the price of crude oil, but only because of its delay in accepting payment. Now in order to "save its face," it is declared, it has determined to have the courts decide whether it should not receive a larger payment in the form of royalty on the basis of refined products, so that even if it loses its case it will be able to say it attempted to get a larger amount than if payments had been permitted promptly.

The attorney-general of Colombia and a former minister of industries are on record disagreeing with the government's contention concerning its right to collect royalty in the form of refined products and a large number of Colombians themselves are inclined to believe the government will not succeed in its contention.

Unique Contention

The thought that royalty could be exacted on a basis of the price of refined oil is new. To what extent it might be adopted by other oil-producing countries of South America is not known, but the exact language of the concessions might obviate the possibility of such a contention being raised. The idea of interpreting the royalty as applying to refined oil is so unusual it is believed there have been few, if any, negotiators of concessions who have given any consideration to such an interpretation. But there is still a possibility, should the Colombian courts decide the royalty can be based on refined oil products, that an attempt may be made in other courts to make similar claims and to throw the dispute into court.

Back of the government's hostility toward American and other foreign interests operating in Colombia is the political criticism against the granting of concessions for the exploitation of oil. In the early days, when Colombia was an unexplored wilderness, as far as any knowledge of oil deposits was concerned, there was readiness on the part of the government to welcome foreign interests that cared to risk their millions in attempting to find oil. A vast treasure was expended in demonstrating the existence of oil, the quantity and value of which astonished no one more greatly than it did the people of Colombia.

Once the existence of this natural resource was known and the investing companies began to realize on their hazardous enterprise, there was a change of public sentiment. The substantial men of Colombia understood the fairness of the exchange in these concessions, but they could not hold back the denunciations of the government from politicians who saw an opportunity to claim the nation had parted with its petroleum on less advantageous terms than it should have received. Criticism so arising is regarded as the basis of all the hostility that has been directed against foreign companies developing the oil resources of Colombia. There are many optimists, however, who believe that the time is approaching when tirades of this kind will give place to the reasoning of conservative and substantial men whose counsel is still influential in the control of Colombian affairs.

BUREAU IS ENGAGED IN RESEARCH ON SYNTHETIC PRODUCTION OF GAS

WASHINGTON, D. C., Feb. 9.—The Bureau of Mines of the Department of Commerce announces that, in view of the possibility that in the future the petroleum products used in the manufacture of city gas may become too expensive for general use, it has begun an investigation as to the commercial possibilities in the use of synthetic hydrocarbon processes in the gas industry.

The results of a preliminary review are given by W. W. Odell, fuel engineer, of the bureau, in Serial No. 2903.

Mr. Odell's statement and a summary of his conclusions follow:

Engineers interested in the manufactured-gas industry have witnessed pronounced improvements in gas-generating equipment and marked changes in operating procedure during the past decade. In spite of these changes, however, the trend of development in the near future seems to be doubtful. Uncertainty exists mainly because no one can yet accurately calculate the number of years which will elapse before petroleum products become too expensive for general use in making gas. Research in this field has been active, and the ultimate results are awaited with interest.

Some engineers predict that in the future coking coal will be carbonized on such a large scale that coal gas will be used (straight or modified) for city distribution; others maintain that gas oil will be used in large quantities in the production of base gas; they believe it will be economical to use oil even at appreciably higher prices. The question involves, among other factors, consideration of initial and relative costs of equipment, flexibility of operation, salability of coke, cost of distributing different gases, and the relative value of by-products.

Synthetic Processes

It is a common belief for many years large quantities of oil will be used in gas-making, particularly in the generation of peak gas, or that water gas will be used for the synthetic production of hydrocarbons to enrich additional water gas. In this paper interest centers in a discussion of the practicability of employing synthetic processes in view of reported investigations of the chemistry of the synthetic reactions.

For many years it has been known that the chief components of water gas would react chemically under proper conditions to form methane. As long ago as 1903 a patent was issued in this country for a gas-making process which included the synthetic production of methane. More recently the studies of numerous investigators here and abroad have shown that besides methane it is possible to produce other paraffins, olefins and additional materials adaptable for enriching water gas or for other uses. The question arises: In what manner, if at all, can such processes be incorporated as a part of the gas-making scheme in a city gas plant?

A review of the published results of various investigators who have studied the conditions under which hydrocarbons can be synthesized from CO and H2 indicates that sufficient data are not available for making accurate calculations of the usefulness of such a process in making city gas. The need for further research is indicated; the following questions are asked in order to bring out this fact:

Purification

Sulphur compounds poison the catalysts which have been proposed for the synthesis of hydrocarbons. Accordingly one might ask: What process is suggested for removing the traces of sulphur from water gas? What apparatus and materials are required? Can the process be made self-sustaining by the recovery of sulphur? Will it be an advantage to use coal or is coke preferred as generator fuel? What will be the cost of purifying water gas if the process is not self-sustained? What means are suggested for removing the CO2 from the reaction products in making enriched gas? Can the CO2 thus recovered be used in the production of a product from which a credit can be realized? For example, can it be economically converted into formaldehyde by chemical reactions?

Suitable Catalysts

Catalysts suitable for laboratory tests are apt to be too soft for use in large-scale operations. It is essential that answers be given to the following questions: What catalysts are best adapted by hydrocarbon synthesis on a commercial basis? In what manner should such catalysts be prepared and what kind of equipment is necessary? What will be the life of a catalyst under conditions that will probably obtain in gas-works practice?

Is it possible to produce a catalyst that will not readily be poisoned by sulphur compounds? Can a catalyst when once poisoned, overheated, or otherwise deteriorated, be revivified or again converted into an active catalyst? How should this be done? Will a catalyst prepared on a large scale be as active as that prepared in the laboratory? If not, how much allowance must be made for this variable? How can the temperature of the catalyst be kept within the optimum working range with large-scale production? In other words, how should a reaction chamber be designed?

Operation and Costs

A desirable operating procedure for a gas plant would include the production of enriched water gas (enriched by synthetic hydrocarbons) in amounts equal to the demand for gas, using the off-peak water gas for the production of condensable hydrocarbons which can be used as solvents, motor fuel, or stored for future use for enriching gas without the deposition of carbon—without its complete cracking. We want to know what is the best method of accomplishing this result and what kind of equipment should be used.

To what extent is it possible to make condensable hydrocarbons without simultaneously making large volumes of fixed gases? What developed method is preferred and satisfactory for condensing and recovering the liquid hydrocarbons? Is it possible to convert a large percentage of water gas into hydrocarbons which can be readily stored and subsequently used for enriching gas by cracking without the deposition of carbon. If so, what products can be thus used, and by what method can they be thus cracked? What apparatus is required? What yield of such hydrocarbons can one obtain from water gas?

By conducting experiments on a larger scale the research chemist probably can obtain the information which the engineer needs for designating equipment and computing results. Not until this is done can accurate estimates be made relating to the cost of operation, the costs of equipment, buildings, and ground, and the economy which may result from the use of a hydrocarbon-synthesis process in enriching gas.

The process for the synthesis of hydrocarbons at atmospheric pressure by virtue of metal catalysts is not yet clearly indicated as the solution to the problem of finding an enricher for lean gas. Unless a more satisfactory catalyst is found, one not readily poisoned by sulphur compounds, it may develop that a process employing higher pressures and oxide catalysts will be most satisfactory.

INDUSTRIAL RESEARCH

The growth of organized research has been somwhat slow in the petroleum industry, but much inspiration that will aid in the development of petroleum research may be gained from what has been accomplished in other industries.

"Industrial Explorers," by Maurice Holland, published by Harper Brothers, New York, contains biographical portraits of eminent scientists who have contributed to the advancement of numerous industries. This is a book of 347 pages, easy to read, and well worth reading.

MUST NOT SHACKLE OIL INDUSTRY AND THEN BLAME IT FOR INACTION

By W. S. Farish
President Humble Oil & Refining Co.

The press has carried reports of numerous statements made before the oil and gas committee of the House in its hearings on House Bill 388, relating to the conservation of oil and gas, in which the charge is made that the Humble Oil & Refining Co. inspired this bill and that in doing so it was actuated by selfish motives and acted on purposes that were against the public interest.

Mr. Gilmore, chairman of the Railroad Commission, publicly stated before the committee that this bill was carefully written line by line by the Railroad Commission and its employes and was prepared by the commission for the purpose of correcting serious omissions in the law resulting from the recodification of our statutes in 1925 and to strengthen the powers of the commission in dealing with the waste of the oil and gas resources of the State. Humble Oil & Refining Co. had nothing to do with the preparation of the bill except that its attorneys attended a meeting of operators out of which grew some suggestions for changes in the bill as originally prepared by the commission and submitted to the oil industry for criticism and suggestions.

Attacks are being made upon the present conservation statutes in certain injunction suits now pending in the District Court of Travis County, which, if successful, will leave the commission without any power of control over the waste of oil and gas. House Bill 388 was drawn to remove this threat in addition to the purposes stated above. It seeks to make sure the power of the commission to continue its faithful and conscientious effort to protect the public through the conservation of these natural resources.

At a hearing before the oil and gas committee of the House I filed two pamphlets with the committee, one containing a general discussion of the conservation problem and the other setting out specifically the Humble Oil & Refining Co.'s position on House Bill 388. This company's position is the same today as it was when the statement was filed with the committee, and in order to make definite and clear before the public what that position is, and in fairness to the Railroad Commission, we here quote the full text of that statement as follows:

Feeling Against Industry Widespread

"There is a widespread feeling over the entire United States that the oil industry is playing fast and loose with perhaps the most necessary of the nation's irreplaceable natural resources; that it has wasted and is still wasting with a careless hand our oil and gas reserves, thereby hastening their ultimate exhaustion. The industry is being publicly condemned for such a course, the President of the United States, himself, having long since taken the lead in this condemnation. Sooner or later, the hue and cry against the oil industry on account of waste will become louder in the State of Texas.

"It is time that someone called the attention of the public and of the legislature to the unfairness of condemning the oil industry for waste, and at the same time refusing to permit the industry legally to take those steps, by agreement or otherwise, which are necessary in order to cure its troubles and to prevent their recurrence. The public has no right, after putting shackles on a man, to complain at his failure to do something which requires a certain amount of freedom of action.

"If permitted by law, under certain restrictions, to make the necessary operating agreements, those engaged in the oil industry could probably meet the situation. If the public and the law-making bodies are not willing to do this, then they should be willing, by all means, to authorize some governmental agency, such as the Railroad Commission in Texas, to pass upon proposed co-operative plans, and if they approve same, then, by proper orders enforce them.

"Such, we believe, is the effect of Subdivision J of Section 4 of what is known as House Bill 388. We have heard that it is being charged that this bill is the Humble Oil & Refining Co.'s bill. This is wholly untrue. As a matter of fact, this bill is not entirely satisfactory to the Humble Oil & Refining Co. It is not the kind of a bill that the Humble company would ask the Legislature to pass if it were trying to secure legislation. It ought to be much stronger and go much further than it does. We are for the bill because we consider it a step in the right direction, and we think that it will benefit the State, the oil industry and the public at large. We hope that it will pass.

"The Humble Oil & Refining Co. earnestly feels that legislation is necessary, and that, without legislation which either permits the industry to control itself or permits the Railroad Commission in Texas to control it, there will be a perfect orgy of drilling, production, and waste of oil and gas. This will bring great financial loss to the State, the University and the public, and may even bring bankruptcy to many operators. Because of its earnest conviction, this company wishes now to restate its position, which it originally took several years ago and has since maintained consistently, to-wit:

Oil Pool Is Natural Unit

"First: The oil pool is the natural unit of competition.

"Second: The most efficient recovery of the maximum amount of oil from a pool depends upon a conservative, orderly, drilling and production program governed by the physical conditions in each particular pool together with the market demand for the oil.

"Third: Overground storage of oil is wasteful and should not be tolerated where it can possibly be avoided.

"Fourth: This company favors any character of legislation which will permit the orderly production of oil and gas from a pool, either

"(a) by permitting the operators themselves to agree upon a production program, or

"(b) by authorizing the Railroad Commission to fix by order a program for such orderly production, and to enforce the carrying out of such order and the modification of it as circumstances may require:

"Fifth: Unrestrained over production is wasteful, and therefore, bad for the industry and bad for the public. It will mean that oil will be produced and sold below the cost of production. This will result in Texas producing and selling its great natural resource to outside consumers at sacrifice prices.

Disaster Will Follow Failure to Act

"Against the dangers that we foresee, the Humble company has raised its voice on previous occasions. There is now pending in the District Court of Travis County suit for an injunction to restrain the Railroad Commission under the present law from enforcing proration orders in West Texas. If this suit prevails and this Legislature passes no law adequately meeting the situation, we think disaster threatens the industry in Texas. If catastrophe results from this condition, then the responsibility will not rest upon the Humble Oil & Refining Co.

"This responsibility will rest directly upon those who are now opposing House Bill No. 388. This opposition, and similar opposition to all other legislation along these lines, comes almost entirely from within the industry, whether such opposition is open or conducted secretly and camouflaged by an outward show of lukewarm support.

"Our views as here expressed may be open to debate and criticism. Our fears for the future may be overwrought. We hope they will never come true. But we have drawn these conclusions after a long study. They represent our honest convictions on this matter and are presented for whatever merit they may contain, and in order that our company's position may be clearly and definitely understood.

"It is the obligation of this Legislature to determine the facts in this controversy and to take upon itself the final responsibility of saying whether or not Texas' natural resources are going to be produced in an orderly, intelligent manner, or whether we are going to have no restriction on the volume or the manner in which they are produced."

PROGRAM PETROLEUM DIVISION, A.I.M.E.

(Continued from Page 83)

Peru—By A. M. McQueen.
Argentina—By J. M. Sobral.
Canada—By G. R. Elliott.
Persia—By Sir John Cadman.
Iraq—By Sir John Cadman.
Roumania—By George Anagnostache.
Netherlands East Indies—By J. Th. Erb.
Russia—By Basil B. Zavoico.

Thursday, February 21
9 a. m., Room 502

Petroleum Production (United States)—Joseph Jensen, chairman.
The Permian Basin: West Texas, Eastern New Mexico and the Panhandle—By A. R. Denison.
North and Central Texas—By W. G. Wender.
East Texas and Balcones Fault Zone—By F. H. Lahee and F. E. Heath.
Gulf Coast—Texas and Louisiana—By W. F. Bowman and John Vetter.
Southwest Texas—By Olin G. Bell.
Rocky Mountain District—By Dean Winchester.
Arkansas, Mississippi and North Louisiana—By H. G. Schneider.
Montana—By Ralph Arnold.
Appalachian Field—By J. B. Newby.

2 p. m., Room 1101

Petroleum Engineering Education—L. C. Uren, Chairman.
Is the Petroleum Industry Overengineered and If So, to What Extent?
To What Extent Should the Engineering Schools Attempt to Train Research Specialists for the Industry?

2 p. m., Room 502

Petroleum Production (United States) Continued—John M. Lovejoy, chairman.
Review of United States—By Joseph Jensen.
California—By W. R. Wardner.
Oklahoma—By L. C. Snider.
Kansas—By Anthony Folger.

2 p. m., Room 1101

Petroleum Research—L. C. Uren, chairman.
Drilling Methods and Equipment—B. J. H. Howard.
Hydraulics of Flowing and Gas Lift Wells—By H. N. Marsh and Bruce H. Robinson.
Back Pressure Control of Flowing Wells—By H. C. Miller.
Experimental Equipment for Gas-Lift Studies—By R. R. Brandenthaler.

6 p. m., Engineers Club

Petroleum Division Dinner.

8 p. m., Auditorium

General Session—A. W. Ambrose, chairman.
Petroleum Refining in 1928—By H. W. Camp.
World's Oil Supply—By V. R. Garfias.
The Crude Oil Supply—By Howard S. Bryant.

GEOPHYSICAL METHODS
Wednesday, February 20
9:30 a. m., Room 903

General Session—D. H. McLaughlin, chairman.
The Seismic Method of Mapping Geologic Structure—By Donald C. Barton.
Interpretation of Gravitational Anomalies—By Capt. H. Shaw.
Theory of Adolph Schmidt's Horizontal Field Balance—By C. A. Heiland. (Presented at Boston meeting and reopened for discussion).
Calculations in the Interpretation of Observations with the Eotvos Torsion Balance—By Donald C. Barton. (Presented at Boston meeting and reopened for discussion.)
The Radioactive-Atmospheric Method of Measurement for Geophysical Prospecting—By Andrew V. Corry.
Depth Attainable by Electrical Methods in Applied Geophysics—By Arthur Stewart Eve: Introduced by F. W. Lee.
Measurement of Gravity at Sea—By Fred E. Wright.

2 p. m., Room 903

Committee Session—Allen H. Rogers, chairman.
Conference on Possible Methods of Recognizing in the Mining Law the Methods and Results of Geophysical Prospecting.

CORROSION
Thursday, February 21
9:30 a. m., Auditorium

Corrosion Symposium—Dr. Ulick R. Evans, Honorary Chairman; Herbert A. Bedworth, chairman; Paul D. Merica, vice chairman.
Corrosion of Metals as Affected by Stress, Time and Number of Cycles—By D. J. McAdam, Jr.
Some Aspects of Corrosion Fatigue—By T. S. Fuller.
Corrosion of Tin and Its Alloys—By C. L. Mantell.
Corrosion of Metals in the Lehigh Valley—By C. E. Reinhard.
The Inhibition of the Corrosion of Aluminum by Soaps—By H. V. Churchill.
Correlation of Laboratory Corrosion Tests with Service: Weather Exposure Tests of Sheet Duralumin—By H. S. Rawdon.

2 p. m., Auditorium

Corrosion Symposium (Continued Session).
Resistance of Copper-Silicon-Manganese Alloys to Corrosion by Acids—By H. A. Bedworth.
Quantitative Measurement of the Corrosion of Metals in Water and Salt Solutions—By G. D. Bengough, J. M. Stuart and A. R. Lee.
Resistance of Iron Nickel Chromium Alloys to Corrosion by Acids—By N. B. Pilling and D. E. Ackerman.
Some New Developments in Acid-Resistant Alloys—By Burnham E. Field.
Practical Application to Corrosion Tests—By Robert J. McKay, O. B. J. Fraser and H. E. Searle.

4 p. m., Auditorium

Institute of Metals Division Lecture—F. W. Bradley, presiding; S. Showronski, vice chairman.
The Passivity of Metals and Its Relation to the Problems of Corrosion—By Dr. Ulick R. Evans.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 52)

Caracas Group No. 1 Company's No. 1 Gestner, SE cor. SW NE Sec. 13-13-18w ..... Drlg. 1,620 ft.
Empire Oil & Ref. Co.'s No. 1 Wann, NE cor. NE Sec. 31-12-19w ..... Underreaming 3,515 ft.
Marland Oil Co.'s No. 1 Vine, SW cor. SW SE Sec. 27-11-19w ..... Drlg. 3,940 ft.
Davis & Hazlett's No. 1 Wieland, NE cor. NE Sec. 1-13-16w ..... Drlg. 1,340 ft.

EDWARDS COUNTY

Amerada & Wilcox's No. 1 Teansil, C NW SW Sec. 32-26-19w ..... Drlg. 4,216 ft.
British American Oil Co.'s No. 1 McCarty, NE cor. NW Sec. 31-25-17w ..... Drlg. 840 ft.

GEARY COUNTY

Wright et al's No. 1 Younker, NW cor. NE Sec. 17-11-5 .. Shut down 1,200 ft.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w ..... Shut down 2,450 ft.

HARPER COUNTY

Amerada Pet. Corp.'s No. 1 Mendiville, C E SE Sec. 24-34-6w ..... Cleaning out 5,353 ft.

HARVEY COUNTY

R. S. Austin's No. 1 Nieman, SW cor. SW Sec. 21-24-2 ... S.D. 2,975 ft.
R. F. Garland's No. 1 Cox, NE cor. NE Sec. 27-24-1w ... Casing 2,204 ft.
Empire G. & F. Co.'s No. 1 Tangeman, SW cor. NE NE Sec. 19-22-1e ..... Drlg. 475 ft.
Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w ..... Drlg. 410 ft.
Hartman & Skaer's No. 1 Seamen, NW cor. NE SE Sec. 26-24-1e ..... Rig.
Helmerich & Payne's No. 1 Lindamond, C SW NE SW Sec. 2-22-1e ..... Drlg. 550 ft.
Fisher & Louck et als' No. 1 Reiger, NW cor. NE Sec. 17-23-2 ..... Drlg. 1,420 ft.

JEFFERSON COUNTY

Wichlet Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 ..... Rigged up and shut down.

JACKSON COUNTY

Garvin & Morton's No. 1 Lutes, SW cor. NW NW Sec. 27-7-15 ..... Shut down 940 ft.

LANE COUNTY

Blankenship Pet. Co.'s No. 1 Schaeffer, NE cor. NE Sec. 24-16-28w ..... Spudded and shut down.

MARSHALL COUNTY

Irwin et al's No. 1 Cooper, NE cor. NW Sec. 10-3-7 ..... Shut down 600 ft.

MARION COUNTY

Empire Oil & Ref. Co.'s No. 1 Burhart, SE cor. NE NE Sec. 11-20-3 ..... Shut down 2,400 ft.
Empire G. & F. Co.'s No. 1 Blankley, NW cor. NE SW Sec. 20-20-4 ..... Drlg. 2,046 ft.
J. E. Hauna's No. 1 Pankrats, NE cor. NE SW Sec. 13-20-3 ..... Rig.
A. E. Meyers' No. 1 Papp, SW cor. SW NE Sec. 10-18-2 .. Drlg. 560 ft.

MEADE COUNTY

Blackwell O. & G. Co.'s No. 1 Beyer, SE cor. NW SE Sec. 9-33-28w ..... 500,000 ft. gas and 2 bailers water; total depth 4,356 ft.

McPHERSON COUNTY

Ted Washabaugh's No. 1 Vosshell, NE cor. NE Sec. 9-21-2w ..... Drlg. 2,415 ft.
Lariaux et al's No. 1 Martinson, NE cor. Sec. 9-19-3w ... Rig.
McPherson Gas Co.'s No. 1 Stein, SW cor. NE SW Sec. 17-18-1w ..... Drlg. 3,395 ft.
McPherson Gas Co.'s No. 1 Gustafson, C NE Sec. 9-17-2w ..... Shut down 3,597 ft.
W. C. Newman's No. 1 Diepenbrock, NW cor. NE Sec. 2-17-1w ..... Dry and abd. 3,534 ft.
McPherson Gas Co.'s No. 1 Wedell, C SW Sec. 12-20-2w ..... 5,000,000 ft. gas 2,983 ft; S.D. 2,991 ft.
Vickers Pet. Co.'s No. 1 Wedell, C SW Sec. 12-20-2w ... Rig.
Mid-Kansas Oil & Gas Co.'s No. 1 Yoder, C NW SW Sec. 8-20-4w ..... Drlg. 2,520 ft.
Marland Prod. Co.'s No. 1 Wilkening, C SW SW Sec. 9-21-1w ..... Drlg. 1,725 ft.

NESS COUNTY

Barnsdall Oil Co.'s No. 1 Lauk, C SW Sec. 35-18-21w .... Casing 600 ft.

OSBORNE COUNTY

L. D. Jarvis' No. 1 Jellison, SE cor. SE Sec. 13-10-15w ... Spudded and shut down.

OTTAWA COUNTY

Anderson et al's No. 1 Bank, NE cor. NW Sec. 28-10-2w .. Shut down 2,820 ft.

PAWNEE COUNTY

F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 31-21-16w Shut down 1,560 ft.

PHILLIPS COUNTY

Watsonia Oil Co.'s No. 1 Marklein, NE cor. SW Sec. 21-3-19w ..... Shut down 3,015 ft.
British American Oil Co.'s No. 1 Weinman, C SW SW Sec. 34-2-19w ..... Rig.

PRATT COUNTY

O'Haver & Jones' No. 1 Lunt, CSW NW Sec. 15-28-14w .. Spudded and S.D.

RENO COUNTY

Austin Drilling Co.'s No. 1 Strickley, SW cor. NW Sec. 17-25-5w ..... Rig.

RICE COUNTY

Allison & Fitzwilliams' No. 1 Poland, NE cor. SW NE Sec. 36-19-8w ..... Cellar.
Higgins & Stembubble's No. 1 Shurr, NE cor. SW Sec. 21-20-10w ..... Drlg. 1,410 ft; show gas.

ROOKS COUNTY

Prairie Oil & Gas Co.'s No. 1 Sandberg, C SW Sec. 20-9-18w ..... Drlg. 1,375 ft.
Krueger et al's No. 1 Poore, NE cor. NE Sec. 14-8-16w .. Drlg. 3,620 ft.
Burford & Brimm's No. 1 Toxa, NE cor. SW SE Sec. 32-19-17w ..... Spudded and shut down.
Shelly and Midwest's No. 1 Jones, SW cor. NE NW Sec. 25-7-16w ..... Shut down 3,485 ft.

RUSH COUNTY

Phillips Pet. Co.'s No. 1 Legleiter, NE cor. NW SE Sec. 16-16-18w ..... Drlg. 720 ft.
Sinclair Oil & Gas Co.'s No. 1 Berching, NW cor. NE NW Sec. 9-16-16w ..... Fishing 3,474 ft.
Danciger Oil & Ref. Co.'s No. 1 Poland, NE cor. SW NE Sec. 17-19-17w ..... Shut down 530 ft.

RUSSELL COUNTY

Joe Liggett's No. 1 Maier, SE cor. NE SE Sec. 8-11-15w .. Top Oswald 3,016 ft.; show oil and water; drlg. 3,280 ft.

SALINE COUNTY

M. Estey et al's No. 1 Peterson, C NE Sec. 6-16-5w ..... Spudded and shut down.
Boyle et al's No. 1 Miller, SW cor. SE Sec. 21-16-1w ..... Shut down 2,615 ft.
Nathan Jones et al's No. 1 Robertson, NW cor. SW Sec. 27-14-2w ..... Underreaming 2,847 ft.

SEDGWICK COUNTY

Bu-Vi-Bar et al's No. 1 Roberts, SE cor. SW Sec. 1-26-2w ..... Rig.
Barnsdall Oil Co.'s No. 1 Means, NW cor. SW Sec. 24-27-2 ..... S.D. 3,242 ft.
Lewis et al's No. 1 Taylor, NW cor. NE Sec. 23-27-2 .... S.D. 1,450 ft.
J. H. Tatlock et al's No. 1 Goelder, NW cor. NE Sec. 4-29-2e ..... Wtr. 2,635 ft; S.D.
Kyser et als' No. 1 Stroot, SW cor. NW Sec. 8-26-2w .... Drlg. 1,920 ft.
Lario & Blair's No. 1 Tjaden, C NE SE Sec. 22-29-2w ... Drlg. 2,245 ft.
Magiason et al's No. 1 Buckles, NW cor. SE Sec. 3-28-1w. Shut down 250 ft.
E. Magiason et als' No. 1 Buckles, NW cor. SE Sec. 3-28-1w ..... S.D. 250 ft.
Magnolia Pet. Co.'s No. 1 Wise NW cor. NW Sec. 36-25-3w ..... Spudded.
McCulloch Oil Co.'s No. 1 John, C NE SW NE Sec. 24-29-1e ..... Drlg. 2,245 ft.
Morgan & Tilley's No. 1 Fitzgerald, NW cor. NE Sec. 4-26-1w ..... Rig.
Barnsdall Oil Co.'s No. 1 Faber, SW cor. NW Sec. 6-27-1w ..... S.D. 3,010 ft.
Bu-Vi-Bar Pet. Co.'s No. 1 Steel, SE cor. SE Sec. 1-26-2w. Drlg. 3,368 ft.
Connell & Slick's No. 1 Cross, NE cor. NE Sec. 27-25-1w. Drlg. 3,055 ft.
VanZant & Mason's No. 1 Fox, C NW SW Sec. 19-25-1w .. Fish. 3,045 ft.
Barnsdall Oil Co.'s No. 1 Samuels, NE cor. NW Sec. 34-25-1 ..... Swb. 70 bbls. 3 hrs. 3,121 ft.

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Marland Prod. Co.'s No. 1 Goodrich, SW cor. NE SW Sec. 16-25-1 ..... Flowed 2,120 bbls. in 12 hours pinched in.
Miller & Wentz's No. 1 Shaffer, NW cor. NE Sec. 9-27-2w ..... Rig.
Morgan et als' No. 1 Corn, SW cor. NE, Sec. 28-26-1w ..... Drlg. 2,245 ft.
E. B. Shawver et als' No. 1 Reeves, SE cor. SW SE Sec. 19-28-1e ..... Drlg. 927 ft.
Shell Pet. Corp.'s No. 1 Lygrisse, SE cor. NE Sec. 15-26-2e ..... Drlg. 1,425 ft.
Washabaugh et als' No. 1 Lowery, NW cor. NE NE Sec. 3-26-2w ..... Rig.

SHERMAN COUNTY

A. L. Henson et al's No. 1 Murry, NE cor. SE NW Sec. 22-7-40w ..... Shut down 3,035 ft.

STEVENS COUNTY

Trees Oil Co.'s No. 1 Thompson, C NE SW Sec. 3-35-38w ..... Lost hole; drlg. new well 894 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w ..... Drlg. 1,325 ft.
McKenna et al's No. 1 Haun, SE cor. NE Sec. 10-33-38w ..... Drlg. 1,800 ft.

SMITH COUNTY

Mid-Kansas Oil & Gas Co.'s No. 1 Unknown, NE cor. NE Sec. 4-2-13w ..... Rig.

SUMNER COUNTY

McCulloch Oil Co.'s No. 1 Teetle, SW cor. NE Sec. 29-34-1w ..... S.D. 4,632 ft.
Gypsy Oil Co.'s No. 1 Williams, NW SE SW Sec. 16-35-3w ..... Fishing 4,400 ft.
Helmerich & Payne's No. 1 Warlick, SE cor. NE Sec. 8-34-2 ..... Dry and abandoned 3,354 ft.
Otstot et al's No. 1 Barlow, SE cor. SE Sec. 22-23-3w ..... Plugging back to 4,150 ft.
Davidson and others' No. 1 Strickland, SW cor. SE Sec. 12-35-1w ..... Rig.

TREGO COUNTY

Central Commercial Oil Co.'s No. 1 Ellis, NE cor. SW NE Sec. 20-13-21w ..... Drlg. 3,215 ft.

WASHINGTON COUNTY

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3 ..... Rig.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 50)

HUGHES COUNTY

E. W. Whitney and others' No. 1 Moore, SE cor. SW Sec. 17-5-9 ..... Underreaming 3,345 ft.
Pure Oil Co.'s No. 1 Fixico, NE cor. SW Sec. 18-8-9 ..... Dry and abandoned 4,500 ft.
Howard Petroleum Co.'s No. 1 Gilbert, NW cor. SE Sec. 25-8-10 ..... Drlg. 4,640 ft.
Gypsy Oil Co.'s No. 1 McGirt, NE cor. NW SW Sec. 21-6-8 ..... Sand 3,310-30 ft.; corrected, hole full water.
T. B. Slick, Inc.'s No. 1 Epperly, NW cor. NE NW Sec. 32-6-8 ..... Dry in Wilcox 4,655 ft.; plugging back.

CANADIAN COUNTY

Wirt Franklin Pet. Co.'s No. 1 North, NW cor. NW Sec. 18-13-10w ..... Drlg. 3,565 ft.

OKLAHOMA COUNTY

Slick & Bailey's No. 1 Koester, C SE NE Sec. 18-13-3w ..... Drlg. 4,926 ft.
Cromwell & Franklin's No. 1 Thompson, SW cor. NE NE Sec. 15-12-3w ..... Drlg. 7,132 ft.
Indian Terr. Ill. Oil Co.'s No. 1 fee, C SE SE Sec. 24-11-3w ..... Flowing 5,697 bbls. daily from 6,498 ft.
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE, Sec. 10-11-3w ..... Drlg. 2,935 ft.

OKFUSKEE COUNTY

Moose & Daniels' No. 1 Stidham, SW cor. NW Sec. 4-11-10 ..... Shut down 622 ft.
T. B. Slick, Inc.'s No. 1 Barry, SE cor. NE SE Sec. 31-11-7 ..... Drlg. 4,010 ft.
Erwin and others' No. 1 Patterson, NW cor. SE Sec. 15-13-9 ..... Location.
Erwin et als' No. 1 Patterson, NW cor. SE Sec. 15-13-9 ..... Location.
Prairie O. & G. Co.'s No. 1 Palmer, NW cor. NW NE Sec. 2-11-9 ..... Rig.

SEQUOYAH COUNTY

Cooper & Badger's No. 1 Young, NW cor. NE NE Sec. 7-12-20 ..... Shut down.
Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-23 ..... Drlg. 990 ft.
Buffington et al's No. 1 Melcher, C SW NW Sec. 31-12-24 ..... Drlg. 2,235 ft.

PAWNEE COUNTY

Washoma Oil Co. and others' No. 1 Buffalo, SE cor. NE Sec. 33-22-5 ..... S.D. 3,200 ft.

POTTAWATOMIE COUNTY

Phillips-Atlantic's No. 1 Winrow, SW cor. NE NE Sec. 11-9-4 ..... Dry and abandoned 4,672 ft.
Shell Pet. Corp.'s No. 1 Livingston, SW cor. SE Sec. 33-7-5 ..... Swb. 35 bbls. oil and some wtr. 4,573 ft.
Superior Oil Co.'s No. 1 Herminghausen, SW cor. NW NE Sec. 24-8-2 ..... Drlg. 5,325 ft.
Shell Pet. Corp.'s No. 1 Lowe, SW cor. NW NE Sec. 17-6-5 ..... Drlg. 4,925 ft.
Pure Oil Co.'s No. 1 Lindley, SE cor. SW SE Sec. 18-8-5 ..... Hunton 4,124-40 ft.; flowing 1,000 bbls.
T. B. Slick's No. 1 Sailor, SE cor. NW NW Sec. 12-8-3 ..... Drlg. 4,216 ft.
T. B. Slick and Shell Pet. Corp.'s No. 1 Hurst, SE cor. NW NW Sec. 17-7-2 ..... Preparing to plug 6,098 ft.
Shell Pet. Corp.'s No. 1 Wyatt, SW cor. NW NE Sec. 17-6-5 ..... Dry and abandoned 4,414 ft.
Mid-Continent Petroleum Corp.'s No. 1 James, SE cor. SE Sec. 22-5-3 ..... Rig.
Rush & Vaughan's No. 1 Laster, SE cor. NE NE Sec. 19-6-4 ..... Rig.

CADDO COUNTY

J. B. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w ..... Shut down 150 ft.
Wirt Franklin's No. 1 North, NW cor. NW Sec. 18-10-13w ..... Drlg. 1,820 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w ..... Shut down 3,394 ft.
English Drilling Co.'s No. 2 Pruitt, CNL NW SE Sec. 22-6-10w ..... Rigged up and shut down.

STEPHENS COUNTY

Stahl & Burris' No. 1 Jefferson, SE cor. NE NW Sec. 2-1-7w ..... Shut down 2,624 ft.
Prince Bros.' No. 1 Hidgecoxie, NW cor. NE Sec. 29-2-5w ..... Rigging rotary.

SEMINOLE COUNTY

Prairie Oil & Gas Co.'s No. 1 Davis, NE SE Sec. 21-10-7 ..... Drlg. 3,752 ft.
Superior and Fuhrman's No. 1 Fay, NW cor. SE SW Sec. 27-11-6 ..... Dry and abd. 4,773 ft.
Magnolia Pet. Co.'s No. 1 Germany, SE cor. NW Sec. 30-9-5 ..... Plugging back to Hunton lime.
Phillips Pet. Co.'s No. 1 Miller, NW cor. SW Sec. 34-11-7 ..... Drlg. 3,720 ft.
Burke-Greis Oil Co.'s No. 1 Cyrus, SE cor. NE NW Sec. 13-9-7 ..... C.O. 3,420 ft.
Harris and others' No. 1 Stidham, SE cor. NW Sec. 30-9-8 ..... Dry and abandoned 4,532 ft.
C. B. Shaffer's No. 1 Carolina, SE cor. SW NE Sec. 4-6-7 ..... Dry and abd. 4,725 ft.
E. W. Whitney's No. 1 Harjo, NE cor. NW NE Sec. 25-7-6 ..... Plugged back 4,325 ft. and shut down.
Gypsy Oil Co.'s No. 1 Andrews, NE SE NW Sec. 27-10-7 ..... Drlg. 3,915 ft.
Shaffer Oil & Ref. Co.'s No. 1 Catchochee, SW cor. SW NE Sec. 18-10-7 ..... Dry and abandoned 3,782 ft.
T. W. Adkins' No. 1 Reed, NE cor. NW Sec. 2-8-8 ..... Drlg. 4,268 ft.
T. B. Slick, Inc.'s No. 1 Tiger, NW cor. SW SE Sec. 13-8-5 ..... Dry and abandoned.
McCulloch Oil Co.'s No. 1 McGilbray, SW cor. SW NE Sec. 4-8-8 ..... U.R. 1,940 ft.
McCulloch Oil Co.'s No. 1 Powell, NW cor. NW, Sec. 11-6-5 ..... Location.

Empire Gas & Fuel Co.'s No. 1 Harjo, SW cor. NW SE Sec. 17-7-6 ..... Hole full water, Wilcox 4,593-4,600 ft.

Marland Oil Co.'s No. 1 Strothers, NW cor. SE NE Sec. 5-16-7 ..... Drlg. 3,820 ft.

Magnolia Pet. Co.'s No. 1 Carroll, SW cor. NW SE Sec. 1-7-5 ..... Drlg. 4,855 ft.

Magnolia Pet. Co.'s No. 1 Harjo, NE cor. SE Sec. 34-6-7 .. Location.

T. B. Slick and others' No. 1 Davis, NE cor. NE Sec. 24-4-6 ..... Drlg. 2,740 ft.

TILLMAN COUNTY

Allen & Treadwell's No. 1 Howell, NW cor. SE Sec. 18-1-17w ..... Drlg. 635 ft.

MAJOR COUNTY

Randau & Mooney's No. 1 Parker, SE cor. NE NW Sec. 4-23-16w ..... Show oil 1,235 ft.; shut down.

Earl and others' No. 1 Turner, C NE NE Sec. 23-20-14w.. Rig.

Wilson et al's No. 1 Unknown, NE cor. NE Sec. 4-23-16w. Cellar.

WOODS COUNTY

E. K. Miller's No. 1 Copenhavera, NW cor. NW Sec. 18-34-13w ..... Moving in tools.

Gypsy-Prairie and others' No. 1 Thompson, SE cor. SW Sec. 10-25-15w ..... Drlg. 3,120 ft.

Sinclair Oil & Gas Co.'s No. 1 Thompson, C SW SW Sec. 12-27-16w ..... Drlg. 2,620 ft.

MURRAY COUNTY

Sinon Oil Co.'s No. 1 Labor, NW cor. NW Sec. 17-1-2... Shut down for casing 1,900 ft.

Ramsey Bros.' No. 1-A Malock, C SW NE Sec. 32-1-3.. Drlg. 427 ft.

DEWEY COUNTY

Huckaby & McCoy's No. 1 Perfect, NE cor. NE Sec. 9-18-15w ..... Shut down 4,355 ft.

Don Sifers' No. 1 Jordan, SW cor. NW Sec. 16-16-17w. Spudded and shut down.

BECKHAM COUNTY

C. & H. Petroleum Co.'s No. 1 Barnes, SW cor. NW NE Sec. 32-9-22w ..... Shut down 3,460 ft.

Martin and others' No. 1 Cluck, NW cor. SE Sec. 1-8-25w. Drlg. 2,820 ft.

L. C. Hivicks' No. 1 Davis, C NW NE Sec. 4-11-26w..... Shut down 725 ft.

Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w ..... Shut down 2,402 ft.

Carson and others' No. 1 Danby, SW cor. SE NE Sec. 20-8-22w ..... U.R. 885 ft.

Pfeiffel and others' No. 1-A Carter, NE cor. NE Sec. 35-9-22w ..... Shut down 1,500 ft.

Day Oil Co.'s No. 1 Ault, NW cor. NW Sec. 33-8-21w.... Drlg. 1,620 ft.

GRADY COUNTY

Remington and others' No. 1 Fryrear, SW SW NE Sec. 15-9-5w ..... Shut down 720 ft.

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w.... Spudded and shut down.

J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w ..... Rig.

J. B. Nichols' No. 1 Brake, SE cor. NE SE Sec. 7-5-7w... Shut down 2,307 ft.

McINTOSH COUNTY

Marlone and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Shut down 2,387 ft.; corrected.

Patterson and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Shut down 5,451 ft.

Wolfe and others' No. 1 Unknown, NW cor. SE Sec. 15-12-18 ..... Rig on ground.

Wolfe et als' No. 1 Unknown, NW cor. SE Sec. 15-12-18.. Rig on ground.

CLEVELAND COUNTY

Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w ..... Shut dov 3,130 ft.

Phillips Pet. and T. B. Slick's No. 1 Hentleman, NE cor. NE Sec. 8-10-2w ..... Drlg. 4,240 ft.

KIOWA COUNTY

Blue Mountain Oil Co.'s No. 1 Jones, SE cor. NW NW Sec. 17-5-14w ..... Shut down 530 ft.

C. B. Cloyes' No. 1 Brazill, SW cor. NE Sec. 34-7-17w.. Drlg. 965 ft.

Johnson & McDowell's No. 1 Thompson, SW cor. NE Sec. 6-6-15w ..... Dry and abd. 2,707 ft.

Adams et al's No. 1 Fanning, NW cor. SW Sec. 2-6-17w. Abd. 630 ft.

Dave Malernee's No. 1 Van Kirk, NW cor. NW Sec. 35-7-15w ..... Shut down 858 ft. in granite.

A. C. Varner and others' No. 1 Bonham, CSL NW NW Sec. 5-6-18w ..... Shut down 1,127 ft.

CUSTER COUNTY

W. E. Witt's No. 1 Wellman, C SE Sec. 1-14-14w Rig and tools.

PONTOTOC COUNTY

Moore & Curran's No. 1 Allen, SE cor. SW SW Sec. 23-5-5 ..... Shut down 1,460 ft.

Denver P. & R. Co.'s No. 1 Roberts, SE cor. NE NE Sec. 36-5-4 ..... Drlg. 718 ft.

COMANCHE COUNTY

Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w. Shut down 4,055 ft.

Wirt Franklin Pet. Co.'s No. 2 Holler, NW cor. NW Sec. 2-4-11w ..... Drlg. 3,326 ft.

Wirt Franklin Pet. Co.'s No. 2 Holler, NW cor. NW Sec. 2-4-11w ..... Drlg. 3,470 ft.

Wright et als' No. 1 Cross, NW cor. SW SW Sec. 4-1-9w.. Rig.

COAL COUNTY

Indian Territory Illuminating Oil Co.'s No. 1 Cook, SW cor. NW Sec. 10-1-11 ..... Drlg. 6,040 ft.

Robert Galbreath and others' No. 1 Jones, SW cor. SE Sec. 24-1-9 ..... Shut down 3,270 ft.

J. S. Cosden's No. 1 Richardson, NW cor. NE NE Sec. 4-2-8 ..... Rig.

PITTSBURG COUNTY

Karr & Koy's No. 1 Hall, C NW NW Sec. 32-4-12 ..... Spudded.

JACKSON COUNTY

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w ..... Shut down 2,020 ft.

SOUTHERN OKLAHOMA

BRYAN COUNTY

Alexander & Oppenheimer's No. 1 Hampton, SE cor. NE Sec. 26-7s-11 ..... Shut down 1,425 ft.

McNull & Gross' No. 1 Smith, CEL SE NW NE Sec. 11-6s-9e ..... Shut down 375 ft.

MURRAY COUNTY

Alter and others' No. 1 Johnson, SW cor. NW Sec. 14-4-7. Spudded and shut down.

COTTON COUNTY

Cuyler & Pyson's No. 1 Thomas, SE cor. SE SW Sec. 16-4-12w ..... Shut down 2,127 ft.

Amerada Pet. Corp.'s No. 1 Dulaney, SE cor. NW NW Sec. 31-4-9w ..... Location.

Pierce & Brown's No. 1 Hertzler, NW cor. NW Sec. 31-3-12w ..... Drlg. 1,620 ft.

JEFFERSON COUNTY

Bridwell et al's No. 1 Trout, CEL NE Sec. 32-4s-6w.... Drlg. 2,260 ft.

Amerada Pet. Corp.'s No. 1 Emerson, NW cor. SE SW Sec. 28-5s-8w ..... Shut down 4,516 ft.

CHOCTAW COUNTY

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19 ..... Shut down 1,346 ft.

TILLMAN COUNTY

Bray and others' No. 1 Barker, NE cor. SW NW Sec. 9-1-15w ..... Shut down 805 ft.

Dixie Oil Co.'s No. 1 McKinney, NE cor. NE Sec. 29-3s-18w ..... Drlg. 2,640 ft.

Stanley & McGregor's No. 1 Mock, NW cor. NW SW Sec. 33-1-20w ..... Dry and abandoned 2,445 ft.

Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-15w ..... Shut down 2,535 ft.

JOHNSON COUNTY

Wapanucka Oil Co.'s No. 1 Banks, Sec. 28-2s-9 ..... Shut down 1,530 ft.

Bush Creek Oil Co.'s No. 1 Kirby, SE cor. NE NW Sec. 9-4-7 ..... Shut down for casing 405 ft.

Smith & Kinsley's No. 1 Lane, SE cor. NW Sec. 29-1-7.. Drlg. 1,560 ft.

Tate Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-5s-9e ..... Drlg. 925 ft.

Sullivan and others' No. 1 Wines, NW NE NW Sec. 11-7s-5e ..... Shut down 475 ft.

H. J. Stump and others' No. 1 McGinnis, SW Sec. 26-3s-8w ..... Rig and tools.

McCrow and others' No. 1 Trust, SW Sec. 12-1s-5e..... Shut down 1,625 ft.

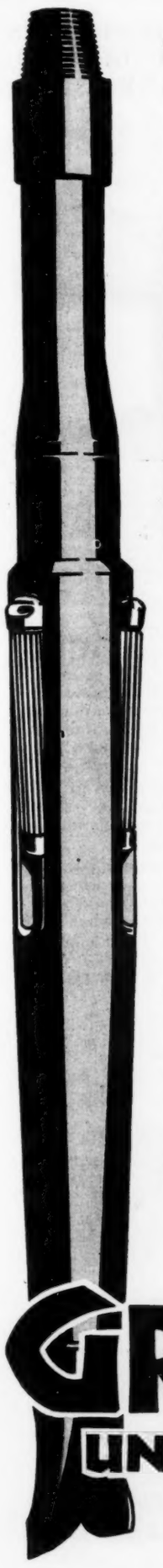
CARTER COUNTY

Devonian Oil Co.'s No. 1 Myer, NW cor. SE Sec. 19-5s-3w. Drlg. 2,416 ft.

Avon-Dickey's No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ..... Drlg. 540 ft.

Schermerhorn Oil Co.'s No. 2 Joliff, NE NW Sec. 24-5s-1e ..... Drlg. 2,715 ft.

Humble Oil & Ref. Co.'s No. 1 Hitchcock, SE NE Sec. 12-4s-2e ..... Drlg. 1,210 ft.



Tomorrow's Flight

The remarkable 150-hour flight of the U. S. Army's "Question Mark" plane (made possible by refueling in the air) gives indication of the possibilities of the future. It is entirely possible for a plane—by air refueling—to circle the earth without landing. The refueling planes could operate from the points indicated on the globe.

Today's Underreamer

THE Grant Underreamer is designed and constructed to meet today's underreaming problems. It is entirely practical, nothing theoretical about it, and when conditions change, Grant design and construction will change to meet them. Its use means, among other advantages, a thick watertight cement job, the removal of the hard-packed mud from the walls, and your casing "on the bottom"—every time!

We make a type of underreamer for every underreaming requirement. May we give you further details?

Grant Oil Tool Co.

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Distributors:
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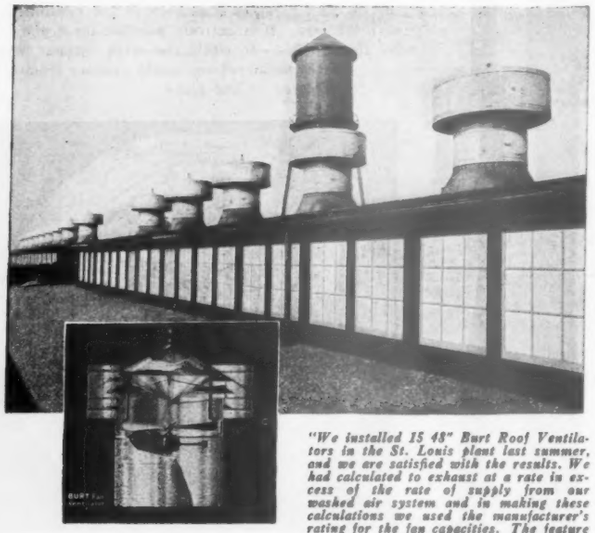
GRANT
UNDERREAMERS

"Results, not excuses"

BURT FAN VENTILATORS ON ST. LOUIS MAZDA LAMP PLANT OF GENERAL ELECTRIC COMPANY



"We installed 15 48" Burt Roof Ventilators in the St. Louis plant last summer, and we are satisfied with the results. We had calculated to exhaust at a rate in excess of the rate of supply from our washed air system and in making these calculations we used the manufacturer's rating for the fan capacities. The feature of the Burt Ventilator which particularly adapted it to this job was the device for closing tightly when not in use."

They Do The Trick!

There are literally thousands of industrial buildings on which ordinary gravity or syphon type ventilators are a waste of money. This is proven by the number of such installations being replaced by Burt Fan Ventilators.

Whether it is a case of heavy washed air as in this St. Louis Mazda Lamp plant or gas fumes or steam let loose in some refining process, an installation of Burt Fan Ventilators will do the trick.

With definite rated capacities, the engineer can tell exactly how many and what sizes are needed to give the necessary changes in air. Fan runs quietly on composition mountings and at low cost. When fan is not running, the inverted cone damper gives normal ventilation or closes tightly as desired. With fusible link, it also gives fire-retarding feature frequently required by Underwriters.

When you have a job where buildings will be used for processes generating steam or obnoxious gases—find out just what Burt Ventilators will do.

Our engineers will gladly co-operate with you in planning correct ventilating facilities.

BURT
Exhaust Heads

save roofs, buildings, and boilers and they last a lifetime. Made in two types and sizes.

BURT
Oil Filters

Burt Oil Filters are cutting lubricating costs in thousands of plants. There is a type for every purpose and capacity.

The BURT MFG. Co.

Ventilators-Oil Filters-Exhaust Heads

929 S. High St. Akron, Ohio

MAGNETOMETER RESULTS IN STATE OF ARKANSAS

(Continued from Page 42)

area No. 6 and the analyses of coals found show a consistently diminishing rock alteration."

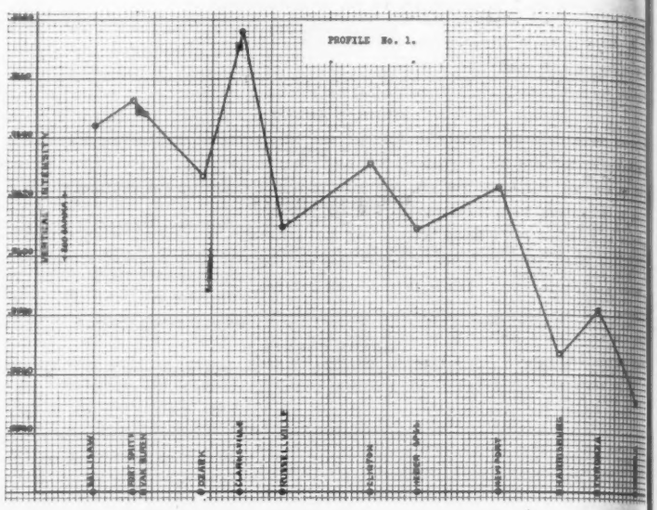
"From the coal analyses it appears that there may be some areas in this region which perhaps contain some small oil accumulations. Drilling in this area, however, has been relatively limited, and only a small amount of information is available concerning the subsurface conditions. There are many evidences of gentle folding in the surface beds of this area which, as a whole, dip slightly to the south. • • •"

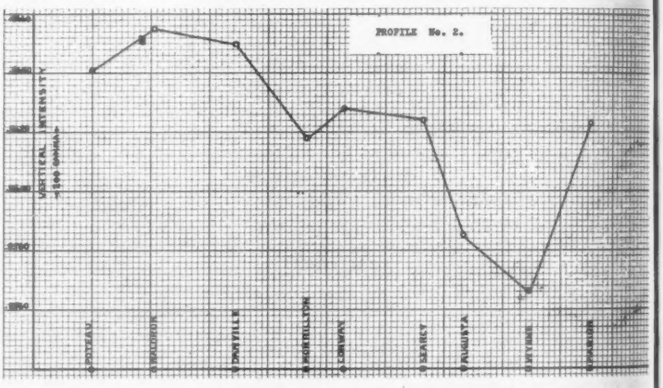
"It seems reasonable to assume that oil and gas possibilities extend in this area to the base of the Chattanooga shale of Mississippian age."

Plate 2 shows that in general the magnetometer features of area No. 7 are extensions of the structures of area No. 6.

"Area No. 8 consists principally of the Salem Plateau area of the Ozark uplift and extends northward into Missouri over a considerable area. The rocks in the region are of Lower Ordovician age and consist principally of dolomites, limestones and sandstones. From a structural point of oil possibilities this region is almost entirely lacking in beds which might prove to be the source of petroleum. • • •"

"• • • Although several tests have been drilled in the Salem Plateau area of Missouri and Arkansas, the tests have given no encouragement for discoveries of either oil or gas in commercial quantities and the area seems to be one in which there are but very slight chances for encountering either oil or gas."

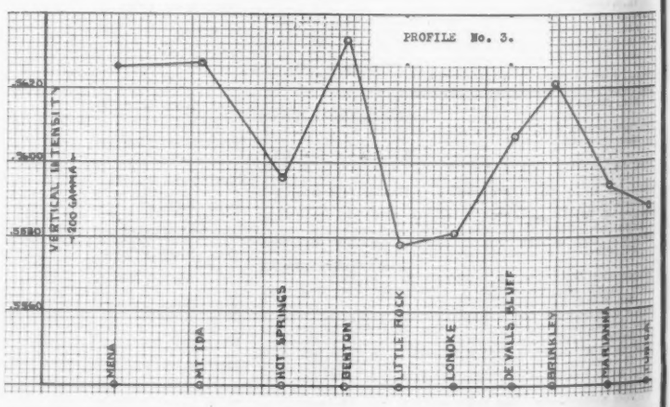




Area No. 8

Plate 2 shows that area No. 8 includes a series of magnetometer lows among which are Hardy, Mountain Home, Marshall and Jasper.

"The surface of area No. 9 is made up principally of Mississippian limestone

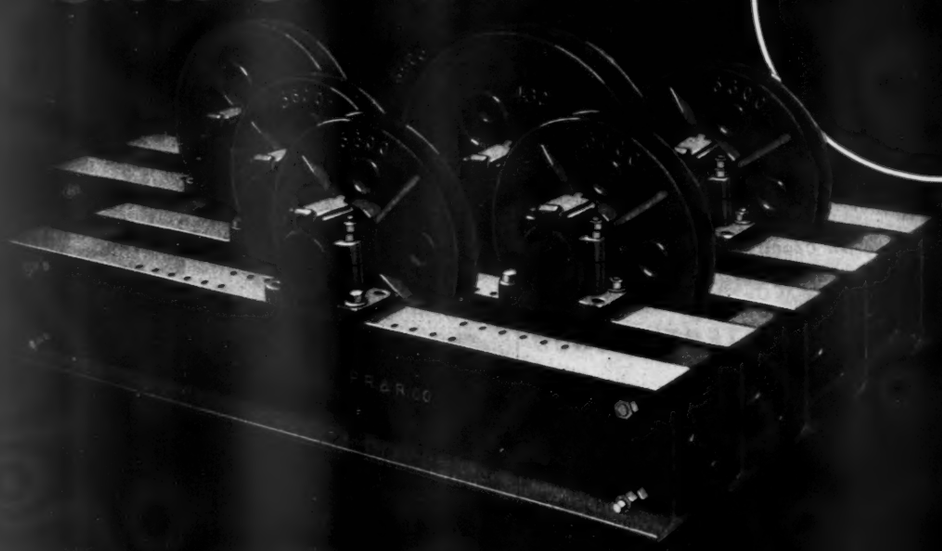


(the Boone formation), the Atoka shale being absent over this area. The Fayetteville shale, which is a carbonaceous shale from 150 to 300 feet thick above the Boone limestone, is exposed in the south-

Parkersburg

HAS SERVED THE OIL FIELDS OF THE WORLD FOR THIRTY ONE YEARS

Steel Crown Blocks



LUBRICATION is *not* a problem with Parkersburg Steel Crown Blocks. They run smoothly and steadily, day in and day out, standing the gaff under the heaviest of loads.

There are twelve features of construction in Parkersburg Steel Crown Blocks — twelve advantages that assure longer and more satisfactory service.

The twelfth, and just recently added feature being Manganese Steel Sheaves with Chrome Nickel Steel Trunnions. These Sheaves contain approximately 12.5 percent Manganese.

Send today for full information on Parkersburg Steel Crown Blocks—ask for Section "D," Catalog 26.

The
PARKERSBURG
RIG & REEL COMPANY

Rig Irons
A.P.I. standard

Portable
Drilling Machines
Wood & All Steel

Rolled Steel Tanks

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Drilling Equipment

DONOVAN BOILERS ARE CONSISTENTLY GOOD

The Logical First Choice for Power

THEY ARE WONDERFUL STEAMERS

We have always claimed that DONOVAN BOILERS are great steamers, and not without reason and proof. They not only steam quickly and on less than the usual amount of fuel, but they hold up the pressure.

Recently a DONOVAN 80 H.P. 175 lb. W.P. Boiler was called on to "do its stuff." It did. This boiler was filled with cold water, as it had been shut down for some time. A low pressure gas burner was installed, as the gas supply was low. The fireman started her up and the result is something to think about.

The boiler was raised from cold water to 100 lbs. steam in one-half an hour. This is merely an example of what the DONOVAN can do, and on low pressure gas at that.

If you have not already done so, it will pay you to buy a DONOVAN the next time you need a boiler. They are winning new users every day because they deliver the goods.

Manufactured by

DONOVAN BOILER WORKS, INC.

PARKERSBURG, W. VA.

NEW YORK OFFICE—30 Church Street
FRICK-REID SUPPLY CORPORATION
Mid-Continent and Eastern Distributors
GREAT NORTHERN TOOL & SUPPLY CO.
MIDLAND IRON WORKS
Montana Distributors

All Leading Supply Houses Throughout the Eastern Fields Handle

DONOVAN QUALITY PRODUCTS

NONE BETTER

eastern portion of this area and has produced gas at Fayetteville. The Chattanooga shale, which is from 25 to 40 feet in thickness, lies beneath the Boone limestone and has produced a small amount of gas. It is not improbable that the Chattanooga shale may be found to contain commercial quantities of gas in this area, provided drilling is confined to favorable structural situations. * * * It may be that parts of this area have a lower rock alteration and that oil may be found, although it probably will be in small amounts."

Plate 2 shows that the magnetometer low at Fayetteville is included in area No. 9.

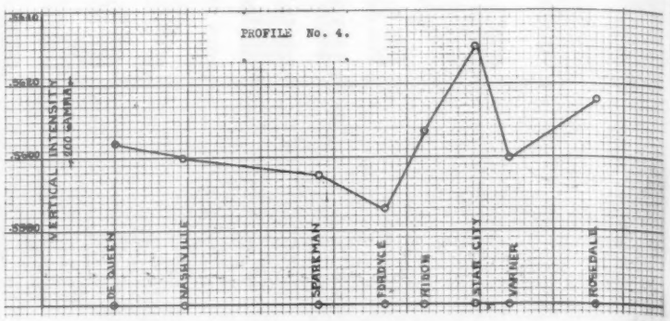
Oil Development in Northern Arkansas

The following extract is from a paper by Carey Croneis, "Oil and Gas Possibilities in the Arkansas Ozarks," Bulletin of the A.A.P.G. Vol. 11, Part 1, 1927.

"Commercial deposits of oil have not been discovered in northern Arkansas, but small flows of gas have been encountered in almost all of the test wells drilled in this area. A well not more than 300 feet deep 5 miles northwest of Fayetteville has supplied a farm house with fuel for approximately 10 years, and wells near Batesville have yielded similar or greater amounts of gas. The gas fields of the Alma district lie about on the border between the Boston Mountains and the Arkansas River Valley. * * *"

"As has been pointed out before, reversals of the general south dip are not unusual, and faults are common, particularly in the Boston Mountains * * *"

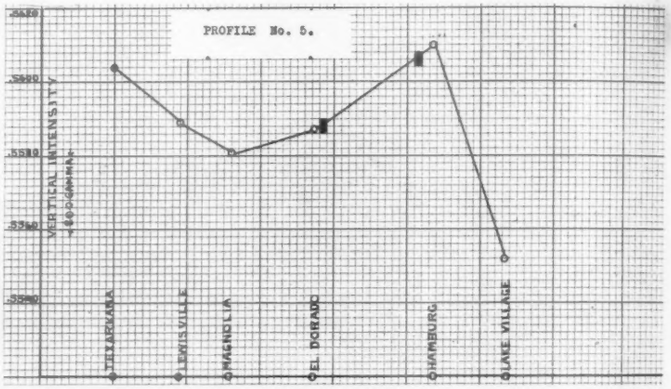
"Prominent structural features apparently are not common in the Salem Plateau and are only moderately plentiful in the Springfield Plateau. * * * On the Springfield Plateau, near the Boston Mountains escarpment, there are several conspicuous structures (notably the Carrolton Dome) but they become more common along the crest of the Boston Mountains, in the latitude of Evansville, Winslow, Sunset, Pettigrew and Witt Springs.



A succession of strong southward dipping monoclines, accompanied by local faulting, appears on the southern slopes of these mountains."

In his conclusions Mr. Croneis in the same paper states several facts which appear to nullify the possibility of gas and oil production in the Arkansas Ozarks and also states the following facts which should encourage prospecting.

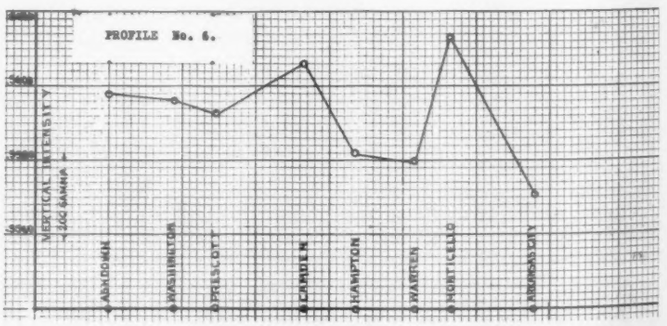
"There are gas fields in the adjacent Arkansas Valley where the carbon ratios are even higher than in northern Arkansas."



"Most of the prospecting in the area has been done without regard to structure, so the tests have not been conclusive."

"Adequate source rocks are present above the Ordovician."

"Gas shows are present in many wells; there is small gas production from a few."



"There are many potential reservoir rocks, and at different horizons."

"There are oil shows at several horizons and some oil seeps."

"There are several favorable structures."

"Some oil occurs in the adjacent parts of Oklahoma, where the carbon ratios apparently are as high as in parts of the Arkansas Ozarks."

"There is a fairly good chance for gas

No use trying TO CHANGE the law of evaporation

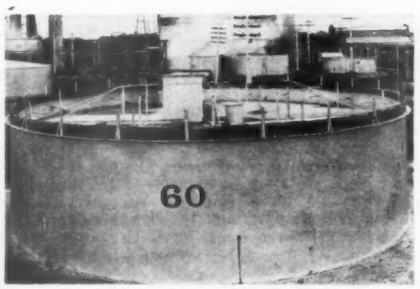
You cannot change the law of evaporation. It's as certain as gravity. But you can protect your oil against evaporation losses. That's what interests you.

Take, for example, the gasoline in rundown tanks. Experience indicates that a "gastight" working tank handling 1,000 bbls. of 65 A.P.I. gasoline per day loses over 1,500 bbls. per year. By equipping this same tank with a Wiggins Floating Roof the loss can be cut to 44 bbls. per year; a saving of 1,460 bbls. or more than enough to pay for the roof in the first year of its service.

Similarly, the Wiggins Breather Roof stops the loss from standing storage tanks and the Hortonsphere makes possible the storage of "wild" gasoline requiring pressure to hold it in the liquid state.

These devices for stopping evaporation loss have received widespread recognition among oil companies. May we refer you to present users? Address our nearest office.

Wiggins Floating Roof on rundown tank in refinery.



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NEW YORK—3147 Hudson Terminal Bldg.
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DETROIT—1514 Lafayette Bldg.
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in the Boston Mountains, and small pools of high-grade oil are possible."

Discussion of the Profiles

Profiles 1 to 6, inclusive, show the variations in vertical magnetic intensity from the west to east state lines. Profiles 6 to 11, inclusive, show the variations from the south to north state lines.

The traverses of these profiles have been so chosen as to cross the known producing gas or oil fields and the solid blocks indicate the approximate location of these fields or producing gas wells with reference to the nearest magnetic station.

It is interesting to note that the gas fields at Fort Smith and Alma occur on a magnetic high (Profile 1). This same profile shows that one or two tests for gas in the vicinity of Clarksville are also on a large magnetic high.

Profile 2 shows that the gas field at Mansfield between Poteau and Waldron also occurs on a magnetic high.

Profile 5 indicates that the El Dorado Field is located in a magnetically low area, while the gas showing at Vicks is associated with the magnetic high at Hamburg.

Profile 7 shows that the Mansfield gas field and similarly the gas fields in the vicinity of Fort Smith are associated with a magnetic high.

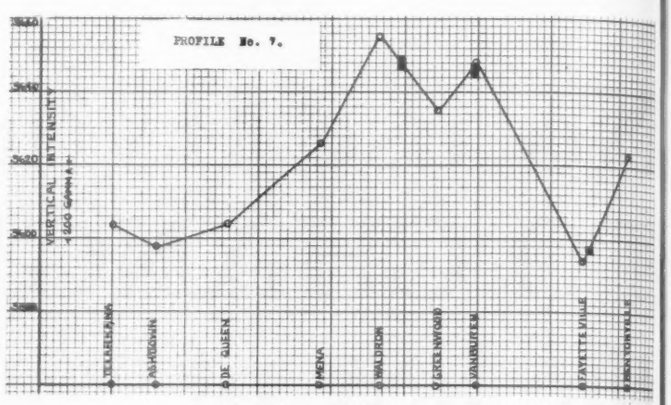
Profile 8 indicates that the showings of gas near Hunt and Harmony are associated with the magnetometer high at Clarksville.

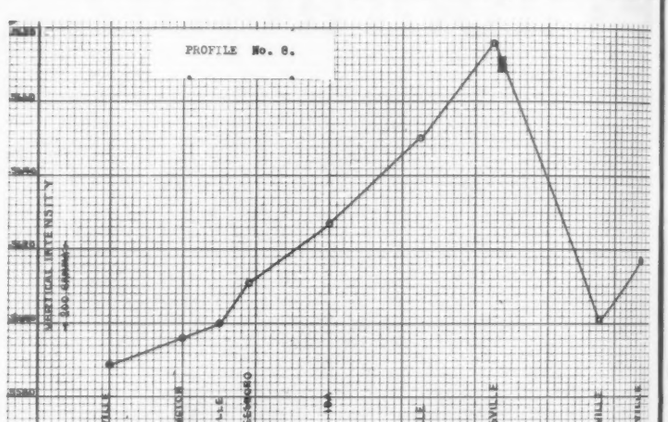
Profile 9 again shows that the El Dorado Field is in a magnetically low area while the Smackover Field is close to the magnetometer high at Camden.

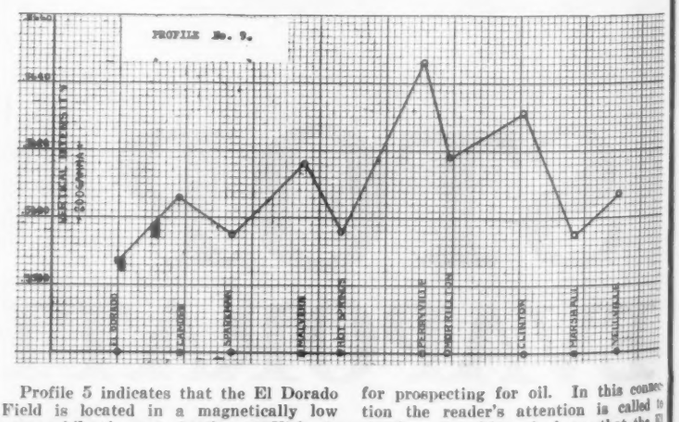
Favorable Areas for Detailed Study

In the preceding paragraphs the oil and gas possibilities of the different areas of Arkansas have been discussed. From a geologic standpoint several of the magnetometer highs and lows can be passed up as being located in areas unfavorable for oil accumulation or gas production. On the other hand several of the magnetometer highs and lows are located in areas that are decidedly favorable for oil and gas production.

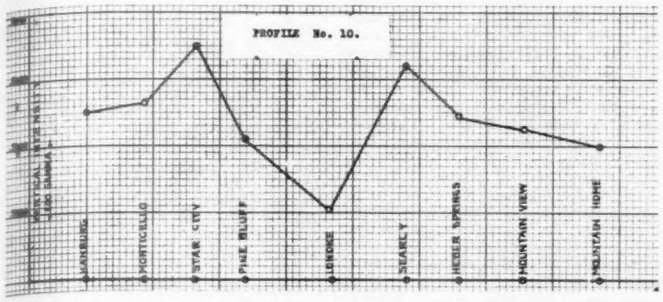
It has been pointed out that Area No. 1 is the most favorable area in the State for prospecting for oil. In this connection the reader's attention is called to the fact that Plate 1 shows that the El Dorado and the Smackover oil fields are on a magnetic high trend extending south from Sparkman through Camden and El Dorado. In this same Area No. 1 the





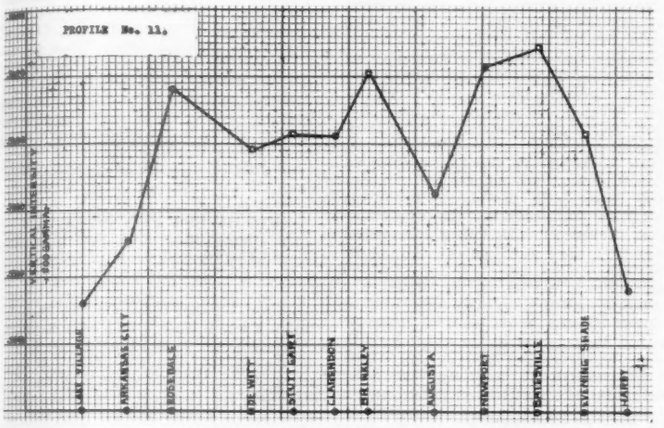


magnetometer shows a still more pronounced high trend extending from Star City through Monticello and Hamburg into Louisiana. Another point about this latter high trend is the fact that the axis



of a water shed also passes through these same places.

In Area No. 2 between Jonesboro and Harrisburg occurs one of the most rapid changes in vertical magnetic intensity in the entire State and though from a geological viewpoint this region is not as



favorable as "Area No. 1," a detailed magnetometer study in the region of Jonesboro and Harrisburg should prove very interesting.

In Area No. 6 occurs the magnetometer high at Clarksville. This area has been shown to be the most favorable for gas production and, coupled with the facts brought out in Profile No. 1, the region in the vicinity of Clarksville should be worthy of additional study for those interested in natural gas fields.

Conclusions

It should be remembered that a detailed magnetometer survey of the State of Arkansas would bring out numerous closed magnetic highs and magnetic lows but in general the study just presented gives a generel magnetometer picture of the State and serves the purpose of pointing out first, the general relation between the known oil and gas producing areas and the magnetic relief and secondly, those magnetic anomalies which coupled with favorable geological conditions are worthy of additional study.

Several of these favorable magnetic anomalies are pointed out while particular attention is called to the gas possibilities in the vicinity of Clarksville and petroleum possibilities on the magnetic anticline through Star City, Monticello and Hamburg.

OIL COMPANIES PROTEST TAXATION IN VERA CRUZ

Oil companies operating in Mexico, headed by Huasteca Petroleum Co., subsidiary of Standard Oil Co. of Indiana, are reported to have sent a new note to the Mexican treasury department seeking modification of certain taxation bills which have recently become effective in the State of Vera Cruz.

It is reported oil companies ask for greater facilities for developing their activities in Mexico and at the same time protest against laws issued by the State of Vera Cruz government which they consider unconstitutional and detrimental to the oil industry.

One of the protested laws affects surface owners, but as some companies own their oil lands they decided to join owners to support their protest, it is reported. The other law affects subsoil rights held by oil companies through application of additional taxation because local administrations are not authorized to impose such taxes, which can be applied only by the federal government.

OKLAHOMA P. L. STATEMENT

The Oklahoma Pipe Line Co.'s statement for January shows pipe line receipts of 3,489,691.01 bbls.; daily average, 112,570.68 bbls.; deliveries, 3,479,773.40 bbls.; daily average, 112,250.75 bbls.; stocks February 1, 3,176,408.82 bbls. Compared with the company's December statement this indicates an increase of 5,022.36 bbls. per day in runs; increase of 10,812.49 in deliveries and increase of 30,307.80 bbls. in stocks.

PRAIRIE P. L. SHIPMENTS

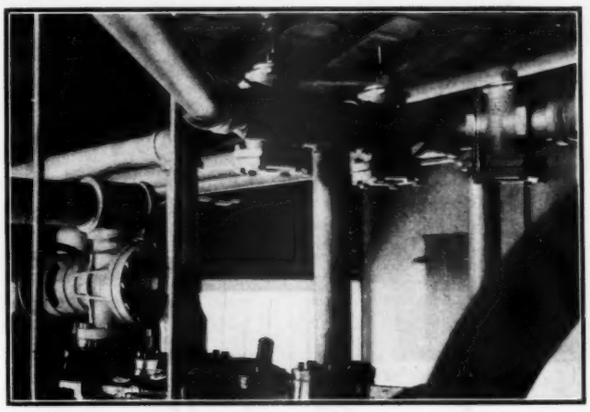
Prairie Pipe Line Co. crude oil shipments in January were 5,914,554.59 bbls., a daily average of 190,792 bbls. Daily average shipments in other recent months were as follows: December, 193,073 bbls.; November, 182,052 bbls.; October, 201,754 bbls.; September, 193,153 bbls.; August, 186,672 bbls. Daily average for six months, 191,249 bbls.

LYKES MADE SUPERINTENDENT

N. Lykes has been made superintendent of the land department of the Indian Territory Illuminating Oil Co., with headquarters at Bartlesville.

Mr. Lykes spent some years with the Carter Oil Co. in Kansas and Oklahoma, and served with the Standard Oil Co. of New Jersey in French Morocco, Algeria and Tunisia. He also spent some time with the Standard Oil Co. of Argentina.

On the job EVERY DAY



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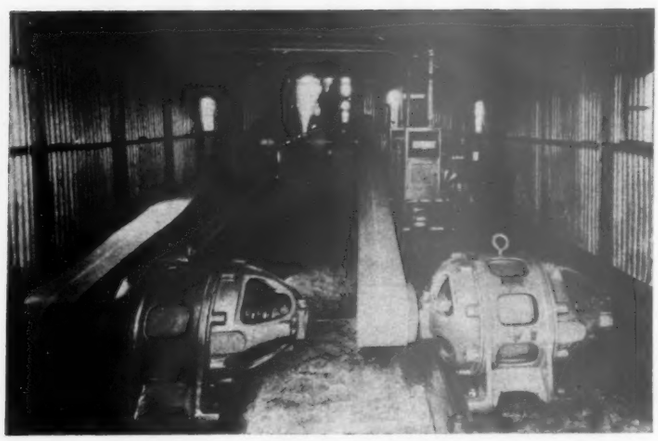

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Westinghouse service for oil fields extends to wherever operations have started. Whether it is equipment for drilling, pumping, air or gas lifts, rig lighting--or any other phase of oil field activity--Westinghouse is prepared to serve in any electrical capacity.

Further information may be obtained from any office or branch of the Oil Well Supply Company, or the National Supply Companies, or from any Westinghouse district office.

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PIPE MILL OPERATIONS AND STEEL PRODUCTION

By B. E. V. Luty

PITTSBURGH, Pa., Feb. 11.— Pipe mill operations have decreased somewhat and are now averaging between 50 and 60 per cent of capacity. The ordinary current run of business would give mills 40 to 50 per cent operation, and some are in that range, but others have still considerable production against old line pipe orders, giving them an operation between 60 and 70 per cent. Variation between mills is due to the customers of some having more business, temporarily, than the customers of others. Later on the respective positions are likely to be reversed. Over a year's time the principal producers have a pretty even distribution of the total business.

In standard or merchant pipe the mills have as good a run of business as is to be expected at this time of year, in relation to the consumption, which is below the average of a year because building is largely out of season. Years ago the pipe mills had heavy shipments at this time, building up jobbers' stocks, but nowadays with so much capacity relative to requirements, and with practically perfect railroad service, jobbers do not need to accumulate extra stocks at any time, and mill shipments are in keeping with actual distribution by jobbers.

Seamless tube mills are averaging an operation of about 80 per cent. They have a moderate amount of oil country goods demand, a fair demand for boiler tubes, and a good demand for mechanical tubing.

The A. M. Byers Co. has secured an order for iron pipe amounting to about 2,100 tons, from the Lago Petroleum Corp., for shipment to the Maracaibo Field, Venezuela, this being the second order from the Lago company. The order involves 60,000 feet of 3-inch, 180,000 feet of 4-inch and 90,000 feet of 6-inch.

Steel production in January was at between 85 and 90 per cent of capacity, against 85 per cent in December as officially reported. The rate is now about 90 per cent. In the past six years steel production has regularly increased month by month after December to a peak in March or April, the latter being the peak month in 1923 and 1928. This time December had a record heavy production rate and the gains seem likely to be moderate. While the general opinion is that steel production will be heavy for several months, say through April, it would not surprise some observers to see a little decrease soon. No large decrease is to be expected in the near future. The future cannot be gauged by the state of mill orders booked, for in these days of very close hand-to-mouth buying the mills never have much actual business ahead.

At the present time the steel consuming industries are running as well as is to be expected at this season of year. The agricultural implement industry is operating at record high rate, and apparently with good prospects. About 15,000 freight cars were bought in November and December and about 17,000 in January, which makes a good run of business for such a period but the buying will have to continue some months more to count up much steel tonnage. The automobile and parts makers are running at various rates, some being quite busy, others far from busy. January automobile production is estimated at a very high figure for a January.

Finished steel prices are steady but are showing no buoyancy.

EASTERN FIELDS

(Continued from Page 70)

trict, Roane County, the United Fuel Gas Co. has made a location on the G. M. Wilmoth farm. In Lee district Calhoun County, the Hope Natural Gas Co. has a rig completed on the Clinton Shock farm.

Lincoln County

In Duval district, Lincoln County, Reishman Brothers are rigging up on the Thomas Nelson farm. In Jefferson district, the United Fuel Gas Co. is building a rig on the Albert Adkins farm. The Empire State Gas Co. is building a rig on the J. W. Savage farm, McComas district, Cabell County. In Mannington district, Marion County, the Carnegie Natural Gas Co. is making a road to a location on the Martha E. Keener farm. In Murphy district, Ritchie County, R. C. Jackson is rigging up on the C. A. Welch farm. In Grant district, B. C. Deem has made a location on the Samuel Hatfield farm. In Murphy district, R. C. Brand is drilling on the McCosh farm.

On Rush Run, Smithfield district, Roane County, 1,000 feet southeast of the Valley Gas Co.'s test on the J. B. Webb farm, the United Fuel Gas Co. has started to drill on the J. I. Kegger farm. In Ravenwood district, Jackson County, the Heck Oil Co. has the rig completed for a second test on the A. J. Brown farm. In the same district, the South Penn Oil Co.'s test on the C. S. McCarty farm is holding up at 100 bbls. a day.

In Mannington district, Marion County, the Owens Bottle & Machine Co. is due in the sand on the Luther Fluharty farm. In the same district, Harry Tennant is drilling on the E. Brewer farm. W. T. Moore and others are due in the sand on the Robert Floyd farm.

In DeKalb district, Gilmer County, the McCall Drilling Co. has drilled No. 5 on the Riddle Brothers farm from the Maxon sand and is showing for a 5-bbl. pumper.

On Barnes Run, Lee district, Calhoun County, F. F. McIntosh's No. 3 on the G. H. McCoy farm is showing for a light gasser in the Big Injun sand. In DeKalb district, Gilmer County, the Hope Construction & Refining Co. is drilling to the lower sands its No. 5 on the Drusella Hardman farm. In Ravenwood district, Jackson County, the South Penn Oil Co.'s test on the C. S. McCarty farm is holding up at 85 bbls. a day.

SOUTHWEST PENNSYLVANIA

On Pigeon Run, Springhill Township, Greene County, the Manufacturers Light & Heat Co. has completed in the Gordon sand on the John Fonner farm, a gasser good for 750,000 feet. On the Pennsylvania Fork & Fish Creek, the Keystone Oil & Gas Co. has drilled deeper it test on the W. M. Caseman farm. It is a gasser in the Gordon sand good for 250,000 feet. On the same stream and township, the Peoples Natural Gas Co. has a 3,000,000-foot gas well in the same formation on the David Lemley farm. On Bissetts Run, J. S. Null & Co. have a Big Injun sand gasser on the David Null farm. On Harts Run, the Manufacturers Light & Heat Co. has a duster in all sands on the Mary Bumgard farm.

Butler County

The new Fifth sand pool in Buffalo Township, Butler County, is producing about 800 bbls. a day. One location due south of the good producer on the Albert Hughan farm, the Phillips Gas & Oil Co. is due in the sand on the Violet Hughan farm. On the east side of developments J. F. Trees is due in the sand at No. 3 on his own farm. He is getting in rigs for six more wells.

COAL CARBONIZATION

A timely book, "The Technology of Low Temperature Carbonization," by Frank M. Gentry, of the New York Edison Co., has appeared from the press of The Williams & Watkins Co., Baltimore, Md. This is an illustrated book of 400 pages, containing numerous charts and tables containing data about the technology of the carbonization of coal.

The early wor kstarted in this country some 20 years ago is described in addition to a complete discussion of the recent progress. The composition of the products, including the gas and oil is given. There is also considerable information about the products from shale.

A good bibliography is included and the volume is well indexed. The book is an example of good printing and the material constitutes a valuable contribution to our knowledge of coal carbonization.

ALEX. W. McCOY RESIGNS

Alex. W. McCoy, vice president of the Marland Oil Co. of Oklahoma, in charge of the land and geological departments, has resigned.

WATTERMAN SUGGESTS PRODUCTION CONTROL

(Continued from Page 83)

jor pools of oil in Texas, California, Arkansas, Louisiana and the Mid-Continent Fields, and a tremendous increase in production.

The price of oil has had little to do with this increase, but the production has had much to do with the price and the uses to which oil has been and is being put.

The magnitude of this production has been much influenced by the rapid and competitive drawing of the oil from the newly discovered pools by reason of the rivalry among the owners of the surface.

This rivalry, in production from new flush pools, arises principally out of the fact that the oil in the sands beneath the surface and the natural gas associated with it are migratory in character and the general rule of law that there is no absolute title in either until capture and control at the surface.

Promiscuous Drilling

The incentive thus given to production has resulted in a promiscuous drilling of unnecessary, rival and wasteful wells, a sheer waste of a very large part of the associated gas, greatly lessening the amount of oil that can be salvaged by flowing and pumping; the waste of large quantities of the oil itself because of inability either to properly store or quickly market it; and the diversion of probably one-half of the total production from essential use to nonessential use strictly competitive with coal.

GULF COAST FIELDS

(Continued from Page 59)

cemented 6⅝-inch casing at 2,710 feet to test. E. F. Simms' No. 1 Scott on the extreme north edge of production, has been worked over in the sand at 4,354 feet and as the week closed was swabbing in an attempt to bring it back in. This well formerly was completed last October flowing an estimated 2,000 bbls. daily. Navarro Oil Co.'s No. 4-A Robinson is drilling hard shale at 4,010 feet.

On the south side of the dome, Humphreys Corp.'s No. 5 West-Schenck, is drilling rock below 3,667 feet. Moody Corp. has made location for No. 6 West-Schenck.

On the east, South Texas Petroleum Co.'s No. 3 Lafferty is in an oil sand at 3,248-55 feet. Gulf Production Co.'s No. 6 Invincible is drilling at 3,541 feet and the latter's No. 14 Luscher at 3,412 feet.

Big Creek—Fort Bend County

The Texas Company's No. 4 Wheat is drilling sand and shale at 3,647 feet. Navarro Oil Co. has a location for No. 3 Davis but is waiting the outcome of No. 2 Davis before doing any work. The latter is pumping about 30 bbls. of oil daily from sand at 1,247 feet. Gulf Production Co.'s No. 51 Davis is drilling gumbo and lime at 2,577 feet and the latter's No. 15 Davis, a workover, is drilling at 2,756 feet.

Nash—Fort Bend and Brazoria

Three Nash Dome tests were in oil sand as the week closed and were standing with casing cemented. Rycade Oil Corp. and Humble Oil & Refining Co.'s joint test, No. 1 Wisdom, a wildcat, 800 feet south of production, is in oil sand at a total depth of 5,408 feet. Rycade's No. 21 Wisdom is at a total depth of 4,-233 feet and No. 24 Wisdom is at 4,328 feet.

Hardin County Domes

At Saratoga, Rio Bravo Oil Co.'s No. 106 B.B.B.&C. is drilling gumbo at 1,-405 feet. E. W. Skinner's No. 2 Sessler, Saratoga, is drilling below 461 feet. Ada Belle Oil Co.'s No. 125 McGoldrick-Stateland is in sandy shale at 856 feet.

Spindletop—Jefferson County

Gulf Production Co. has set strainer in its No. 17 Marrs McLean and as the week closed was swabbing. Bottom of the hole is at 5,436 feet. Yount Lee Oil Co.'s No. 53 McFaddin is drilling shale and sand at 4,750 feet. No. 90 McFaddin is swabbing at 3,105 feet. No. 91 McFaddin is in sand and shale at 3,775 feet, and No. 92 McFaddin is in sand and shale at 3,325 feet. No. 93 McFaddin is drilling gumbo at 2,400 feet. No. 4 Davis has been rigged up to deepen. No. 74 Gladys City is drilling sand and shale at 4,325 feet. No. 75 is in oil sand at 3,124 feet with casing cemented. No. 76 Gladys City is drilling sandy shale at 3,325 feet. No. 77 Gladys City is drilling shale and sand at 3,500 feet. No. 78 Gladys City is drilling sand and shale at 2,525 feet.

Liberty—Liberty County

Navarro Oil Co.'s No. 1 Baldwin is drilling water sand at 870 feet. Yount Lee Oil Co.'s No. 14 Mitchell late in the week had set screen to test a sand found at a total depth at approximately 3,400 feet. A rig is up for No. 15 Mitchell.

Vacuum Oil Co.'s No. 1 Trinity River on the northwest side of the dome is drilling gumbo at 2,050 feet. The Texas Company's No. 3 Pickett is drilling sand and shale at 3,243 feet. The latter also has made location for No. 5 Green, which is 400 feet northeast of No. 1 Green. No. 1 Green, a rank wildcat, came in for an initial production of 2,500 bbls. nearly a year ago. Although more than a dozen tests were put down in the drilling flurry following the completion of that wildcat, all proved disappointing and the area has been abandoned until recently with the exception of the discovery well which continues to produce.

In the shallow sand area on the dome, The Texas Company's No. 18 Staiti is drilling rock at 705 feet. This company's No. 19 Staiti is drilling sand and shale at 1,531 feet. Sun Oil Co.'s No. 36 Mitchell is in the oil sand at 1,147 feet and as the week closed was drilling plug. This company's No. 39 Mitchell is drilling below 257 feet. Sun's No. 34 Mitchell Saturday was nearing the oil sand. No. 33 Mitchell tested dry at 1,026 feet. Four other tests are building derricks or rigging up. To the north of this pool, Empire Gas & Fuel Co.'s No. 1 Goggan is drilling lime and shale at 2,710 feet. Brownie-Babbette Oil Co. has made location for No. 1 Turner. Others are standing.

SOUTH LOUISIANA

Lockport—Calcasieu Parish

Vacuum Oil Co.'s No. 1 Henshaw Le-Moin has set 7-inch casing preparatory to testing a deep sand at a total depth of 5,597 feet. No. 4-A Farquahar ran a sand testing tool at 4,514 feet but tested dry. No. 22-A Miller is in the shallow sand at a total depth of 1,163 feet and has set 6¼-inch casing to test. This test is just 3 feet from No. 22 which went to a deep sand and was drilled without moving the derrick or rig. No. 23 Miller is drilling sandy shale at 3,738 feet. A location has been made for No. 24 Miller and a bridge is being built to it. No. 13 Miller is sidetracking at 4,227 feet. Shell Petroleum Corp.'s No. 1 Miller is rigged up.

Jennings—Acadia Parish

E. F. Simms' No. 1 Grace Von Schuler, west side deep test, is drilling hard sand at 5,180 feet. This operators' No. 2 Syndicate-Clemont is trying to clean hole to deepen from 3,446 feet where it has been standing for several months. His No. 2 Cockrell is down 1,380 feet where a string of 12½-inch surface casing has been set. Jennings Petroleum Co.'s No. 2 Eunice Crowley tested salt water at 3,772 feet and is drilling deeper below 3,823 feet. Gulf Refining Co.'s No. 36 Jennings Clemont is drilling shale at 2,-841 feet.

On the east side of the dome, Yount Lee Oil Co.'s No. 6 Housierre-Latrielle is drilling shale at 5,760 feet and its No. 4 Crowley is in sand at 2,414 feet. The Texas Company's No. 107-A Latrielle tested salt water at 1,733 feet and is drilling deeper.

Edgerly—Calcasieu Parish

Drysdale & Savoy's No. 3 Hill is being rigged up to put on the beam. It is in a sand at 3,147 feet. Wilson-Broach's No. 2 Wilson late in the week had set strainer to test a sand at 3,537 feet.

Vinton—Calcasieu Parish

Gulf Refining Co. has rigged up to deepen its No. 44 Star Vincent, a former producer. Marrs McLean's No. 12 Gray is drilling at 1,335 feet. Vinton Petroleum Co.'s No. 1 Matilda Gray is drilling below 2,631 feet, and its No. 10 Vincent below 2,357 feet.

Hackberry—Cameron Parish

Calcasieu Oil Co.'s No. 13 Watkins, East Hackberry, is drilling gumbo at 2,-170 feet. This company's No. 5 Dorion is down 956 feet, where 10-inch surface casing has been run. The Texas Company's No. 4-B Calcasieu Lake is building derrick.

On the old Hackberry Dome, Rycade Oil Corp.'s No. 1 Gulf Land, west flank, is in another oil sand found at a total depth of 4,345 feet and has set 4½-inch casing to test. Rycade and Humble Oil & Refining Co.'s No. 1 Gulf Land is standing a derrick. On the south side, Yount Lee Oil Co.'s No. 1 Perkins is drilling shale at 4,450 feet. No. 1 Vincent is in an oil showing sand at 3,550 feet and has set casing.

Bayou Bouillon—St. Martin Parish

Rycade Oil Corp.'s No. 3 Atchafalaya fee is drilling out a bridge at 4,622 feet. No. 6-C Bouillon fee is drilling sand and lime at 2,583 feet. No. 8 Bouillon fee is standing rigged up and No. 7 Bouillon fee is a location. No. 3 Louisiana State is drilling shale at 205 feet.

Miscellaneous Fields

At Damon Mound, Brazoria County, Sinclair Oil & Gas Co.'s No. 5 Norton has been abandoned in heaving shale at 4,264 feet. Rycade Oil Corp. and Humble Oil & Refining Co.'s No. 4 Hudson is drilling shale at 3,540 feet. Gulf Production Co.'s No. 18 Moore is drilling gumbo at 2,155 feet.

At Anse La Butte, Yount Lee Oil Co.'s No. 4 Louisiana Petroleum Co. is drilling gumbo at 1,450 feet. Gulf Refining Co.'s No. 11 United Land Co. is drilling at 1,600 feet. This company's No. 11 Industrial, Starks, is in sand at 4,549 feet. Pure Oil Co.'s No. 7 Yount Lee Oil Co. which sanded up after coming in as a producer from sand at 4,594 feet, is being worked over. No. 8 Yount Lee Oil Co. is drilling sand at 4,457 feet.

MISCELLANEOUS WILDCATS

Texas

Brazoria County — Shell Petroleum Corp.'s No. 3 Reece, Allen Dome, is drilling sandy lime at 4,013 feet. This company's No. 5 Allen is drilling shale at 4,759 feet. Its No. 1 Random has been abandoned at 5,035 feet. Empire Gas & Fuel Co.'s No. 2 Brock, Stratton Ridge, is drilling shale and sand at 3,130 feet.

Chambers County—Gulf Production Co.'s No. 1 Wilborn, Hankamer Dome prospect, is drilling gumbo and lime at 4,185 feet. Pure Oil Co.'s No. 2 Lost Lake, Lost Lake Dome, is in a sandy shale showing oil at 3,486 feet and will set casing to test. This company's No. 1 Mays is drilling sandstone at 1,207 feet.

Fort Bend County—South Texas Petroleum Co.'s No. 1 Hartfield, Needville, is drilling hard sand at 5,130 feet. Gulf Production Co. has made location for No. 14 Wolf at Long Point.

Galveston County—Republic Production Co.'s No. 1 Lobit, Dickinson, is drilling shale at 3,879 feet. Long and associates' No. 1 Irwine & Bishop, also Dickinson, has been shut down again after drilling to 4,410 feet.

Harris County—Humble Oil & Refining Co.'s No. 1 Minnetex, Mykawa, is drilling shale at 5,412 feet. This company's No. 5 Warren at Hockley, is drilling hard sand at 1,848 feet. South Texas Petroleum Co.'s No. 1 Hicks & Higbee, Almeda, is drilling gumbo at 2,750 feet.

Jackson County—The Texas Company's No. 1 Moore, north of Edna, is drilling sandstone at 3,166 feet. Wright Brothers' No. 2 Classen, Edna, is drilling shale at 3,895 feet. No. 8 Drushell is a derrick.

Jefferson County—The Texas Company's No. 1 Pipkin, Big Hill, is drilling sand and shale at 4,207 feet. Gulf Production Co.'s No. 6-A Bordages, Fannette, has pulled screen at 4,775 feet and will drill deeper. Farhar and associates' No. 1 Rohwedder, 5 miles northeast of Beaumont, is drilling gumbo at 2,000 feet. Yount Lee Oil Co.'s No. 1 Nona Mills, Beaumont, is rigged up.

Liberty County—The Texas Company's No. 2 Davis, Davis Hill, is rigged up. Humble Oil & Refining Co.'s No. 3 Sterling, Moss Bluff, is mixing mud. Union Exploration Co.'s No. 2 Esperson, Fisher Survey, is drilling gumbo and lime at 1,509 feet.

Matagorda County—Crossland and associates' No. 1 Hawkins, Shepherds Mott, is drilling shale and lime at 3,209 feet.

Orange County—The Texas Company's No. 1 Kuhn, Port Neches, is rigged up and ready to drill.

Waller County—The Texas Company's No. 1 Young is standing rigged up.

Washington County—Sun Oil Co. has abandoned temporarily its No. 1 Mrs. J. J. Grote, Clay Creek. It came in the previous week from a sand at 1,395 feet making considerable salt water. No. 1 Marcus is fishing stuck drill stem at 3,585 feet. No. 1 Einman has set liner to test at 1,875 feet. Other tests are standing as rigs or derricks.

Wharton County—Hearte and associates' No. 1 Brown, south of El Campo, has been shut down in sand at 1,680 feet.

South Louisiana

Cameron Parish—Shell Petroleum Co.'s No. 6 Watkins, Black Bayou, is drilling hard sand at 2,938 feet. No. 7 Watkins is drilling sand and gravel at 823 feet.

Iberia Parish—The Texas Company's No. 3-A Vermillion Bay is drilling rock at 4,115 feet. Gulf Refining Co.'s No. 3 Kling, Loreauville, is drilling sand at 2,960 feet. No. 1 Moresi, same district, has been spudded in.

Iberville Parish—Shell Petroleum Corp.'s No. 3 Wilbert, White Castle, is drilling shale at 3,135 feet. Standard Oil Co.'s No. 2 Wilbert, Bayou Blue, is building derrick. No. 1 Schwing, same dome, is in gumbo at 1,785 feet.

Miscellaneous Parishes—Evangeline Oil Co.'s No. 1 Crowell-Spencer, Pine Prairie, Evangeline Parish, is drilling sand at 4,-712 feet. Vacuum Oil Co.'s No. 1 De-Vilbiss, Jefferson Davis Parish, is drilling sticky shale at 4,512 feet. Gulf Refining Co.'s No. 9 Stark, Thibodaux, La-Fourche Parish, is standing. Gulf Refining Co.'s No. 1 Morris & Rose, Spanish Pass, is rigged up. The Texas Company's No. 1 Botney Bay, Port Barre, St. Landry Parish, is drilling gumbo at 3,621 feet. Other wildcats either are standing or made very little hole during the week.

CALIFORNIA FIELDS

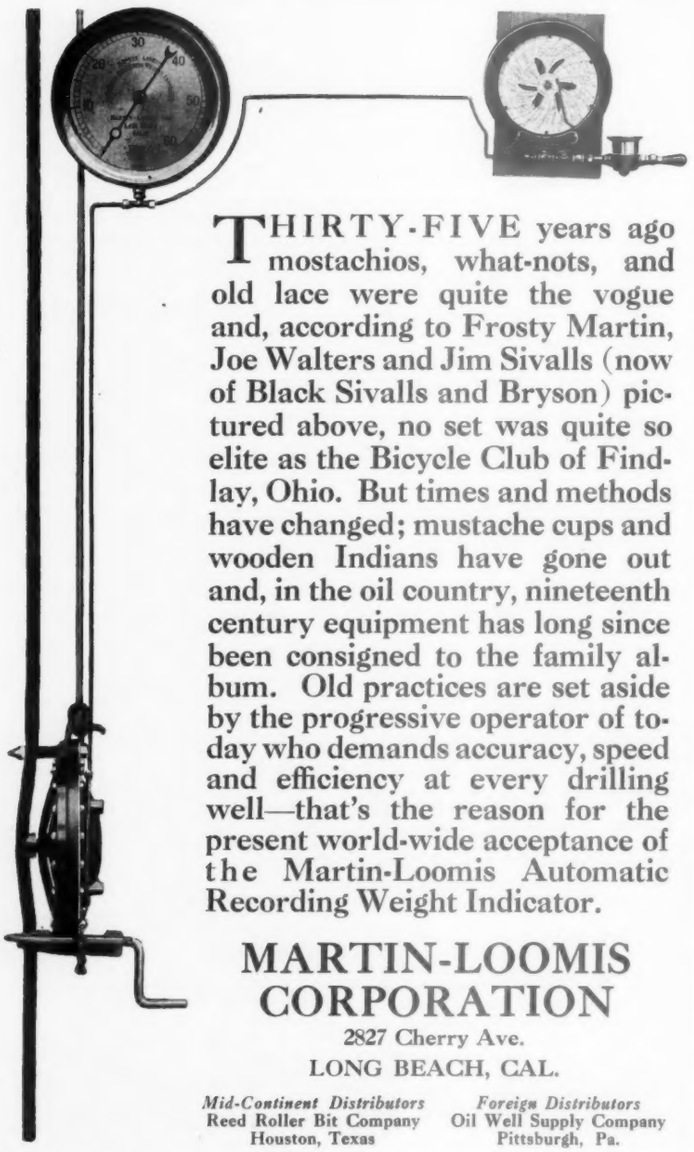
(Continued from Page 64)

slightly increased development work, although it must be remembered that only a limited amount of drilling will be undertaken in both of these fields as there is no intention to develop maximum production. The Barnsdall Oil Co. with two strings of tools to its credit at Rosecrans, recently erected two new rigs, one on the Rosecrans and another on the O'Dea lease. The Union Oil Co. spudded in No. 12 Rosecrans, a new well, on February 1, and is as a consequence working on four holes. The Richfield Oil Co. is putting the finishing touches on No. 1 Rosecrans and this well should be tanking oil within the next 10 days. No. 2, in the meantime, is being rigged up and will undoubtedly be an early spud, possibly immediately upon the completion of No. 1. The Huntington Beach Field has passed out of the picture as far as present production is concerned and, while new wells will be completed at infrequent intervals, drilling operations will be more or less of a sporadic nature. There are three wells under way in the Huntington Beach Field at the present time, with another being rigged up preparatory to an early spud. The Richfield Oil Co. recently staked location for a new well on the Bardeen property at the corner of Garfield and Holly Street in this field. The possibility of developing deeper production at Huntington Beach has been discussed for a number of years and this well should be watched closely as it may ultimately be carried down for a deep conclusive test. It is the present intention to develop the Known horizon but it would not be at all surprising if this tentative program was later revised.

Richfield

The Richfield and Brea Olinda Fields of Orange County in southern California are reflecting more development work at

Consigned to the Old Family Album



THIRTY-FIVE years ago mostachios, what-nots, and old lace were quite the vogue and, according to Frosty Martin, Joe Walters and Jim Sivalls (now of Black Sivalls and Bryson) pictured above, no set was quite so elite as the Bicycle Club of Findlay, Ohio. But times and methods have changed; mustache cups and wooden Indians have gone out and, in the oil country, nineteenth century equipment has long since been consigned to the family album. Old practices are set aside by the progressive operator of today who demands accuracy, speed and efficiency at every drilling well—that's the reason for the present world-wide acceptance of the Martin-Loomis Automatic Recording Weight Indicator.

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present than either of these districts has shown at any one time within the past several months. The Continental Oil Co. is running two strings of tools at Richfield, both wells having recently been spudded in. The Superior is drilling one well at present but is rigging up another, No. 3 Etchandy, for early work. George W. Johnson, J. A. Nugent and O'Brien & Webber each has one well under way at the present time. In the Brea Olinda Field, the Brea Canyon Oil Co. is drilling two new wells and the Birch Oil Co., Union, Shell and Fullerton Oil Companies one each. There are only two wells under way at Montebello and both of them. No. 17 Monterey of the St. Helens Petroleum and No. 2 Stocker of the Standard, should be listed as early completions. Development work in the Potrero Field of Los Angeles Basin is going ahead rather slowly due to the fact that the Associated, which controls almost the entire potential acreage, is in no hurry to develop production. The California Eastern Oil Co. has encountered the Cypress Oil zone in No. 1 Pollard, located in the town lot area adjoining the Associated's holdings on the northwest, but it will probably be another 10 days or two weeks before a production test is undertaken. This well has been practically suspended for about two weeks due to litigation although circulation is being maintained. The California Eastern's leases in this area were acquired more than a year ago but the title to many was clouded and a large number of the town lots are being quitclaimed, although the company's land department is endeavoring to consummate new leases simultaneous with their relinquishment. Stephens & Woodward spudded in their first well in the town lot section during the latter part of January and this well is also expected to result in production as it is only about 750 feet removed from No. 1 Pollard of the California Eastern, which already has encountered the pay.

SOUTHWEST WILDCATS

(Continued from Page 57)

in Refugio County the Magnolia Petroleum Co. picked up a sand at 2,815 feet in its No. 1 Glenewinkle that showed quite a little gas.

In Medina County, a little southwest of Devine, Donaldson Oil Development Co.'s No. 1 Adams Co. at 2,535 feet cored Austin chalk which probably is about the top of the chalk and it had quite a strong odor of oil. The company is encouraged and will look for some porous streak in the Austin to produce.

Duval County

National Oil Co. is using magnetometer to check location for No. 2 Ball on the Ball ranch. Magnolia Petroleum Co.'s No. 2-A Hahl, Survey 51, located 150 feet to south and east lines, is drilling at 4,962 feet. O. Henry Oil Co.'s No. 1 Henry, Block 1,879 of Snodgrass Subdivision of Mesquite grant, 450 feet to southwest lines and 220 feet to northeast lines, is drilling at 1,564 feet. W. F. Morgan's No. 1 Welder-Woods, Survey 102, located 2,725 feet to east line and 75 feet to south line, is rigging up.

Starr County

The Texas Company's No. 1 Ofelia Resendez, Porcion 69, Block 174, located 150 feet to south and east lines, is drilling at 3,675 feet. Crays & McCardle's No. 1 Hicks & Hicks, Perdernal grant, 150 feet to northeast lines and 200 feet to southeast lines, is drilling at 150 feet.

Webb County

Edouard Raymond's No. 1 Schmellzer, Share 2, J. Galan grant, Brewster Pasture, is moving on. G. S. Lumpkin, Porcions 33, 34 and 35, Block 17, is location 1,170 feet to east line and 150 feet to south line. L. W. Nelson's No. 1 Moglia, Survey 672, located 150 feet to east line and 2,584 feet to south line, is moving on.

Zapata County

National Oil Co.'s No. 1 Don B. Adams, Section 11, Block 4, is moving on rig. John Pappas' No. 1 Cuellar, Porcions 33 and 34, Block 5, located 333 feet to northeast lines and 194 feet to southeast lines, has set 10-inch casing at 20 feet.

Bastrop County

Gypsy Producing Co.'s No. 1 Lottman estate, east of Bastrop, has resumed drilling at 2,323 feet. Billy Mayfield's (Kreb & Leach) No. 2 McColl, Stephen F. Austin Survey, 50 yards west of No. 1 is shut down at 1,010 feet.

Bexar County

Allen Burnam's No. 1 Ward, A. A. Gardiner Survey, is drilling at 1,600 feet. Dixie Oil Co.'s No. 1 Medina Irrigation Co., William Miller Survey No. 180, located 1,666 feet to north line and 470 feet to west line, spudded in and shut down. Gulf Production Co.'s No. 1 F. Gutz, M. F. Rodriguez Survey No. 3, located 150 feet to north and west lines, is drilling at 1,340 feet in sticky shale. Humble Oil & Refining Co.'s No. 2 Oppenheimer, J. M. Urriegas Survey, is location 300 feet north of No. 1. Indian Creek Oil & Gas Co.'s No. 1 W. Wolfsohl, J. A. Navarro Survey No. 5, located 190 feet to CEL, is moving in heavier rig to drill to Edwards lime. William M. Morgan's No. 1 E. S. Bridge, 8 miles southeast of San Antonio, is shut down at 800 feet with little showing of oil around 600 feet. Moore-Jauer's No. 1 Holly R. Ellison, T. York Survey, 2,916 feet to east line and 1,500 feet to south line, is underreaming casing at 383 feet. R. L. Raborn's No. 1 Engelmann, John James Survey No. 73, located 300 feet to south line and 600 feet to east line, has resumed work at 1,715 feet.

Blanco County

C. W. Bates' No. 1 Herman Massey, Henry Manton Survey, 920 feet to north line and 660 feet to east line, is standing at 214 feet. Robert A. Rodson's No. 1 Glasscock, Survey 50, located 150 feet to CEL, is standing at 962 feet with oil in hole.

Brooks County

Ed H. East's No. 1 B. Garcia, Block 13, Las Mestena grant, 400 feet to east line and north line, is moving on.

Caldwell County

George B. Walker and associates' No. 1 L. H. Lynch, Dorthy Benton Survey, 300 feet to south and west lines, is coring at 2,290 feet in Edwards. Whittington and others' No. 1 J. G. Horner, Francis Berry Survey, is drilling at 540 feet.

Calhoun County

B. F. Thompson's No. 1 Thomas, John P. Tully Survey, 920 varas north, 5 minutes 30 seconds west of north corner of John C. Post Survey, is drilling at 2,390 feet.

Colorado County

National Oil Co.'s No. 1 H. T. Brandt, Freeman Pettus League, is location 150 feet to south line and 1,000 feet west of the highway. Shell Petroleum Corp.'s No. 1 Neuendorff, J. Brod Survey, is location 500 feet to east line and 200 feet to south line.

Edwards County

A. M. Griffith's No. 1 Wardlaw, Section 60, Block V-8, J. S. Clift, 1,050 feet to west line and 150 feet to south line, has been spudded in. McMan Oil & Gas Co.'s No. 1-B Walter Schreiner, H.E.&W.T.R.R. Survey, Section 50, Block F, 330 feet to south and east lines, is fishing at 3,995 feet.

Frio County

Austin Johnson and others' No. 1 Eschenburg, E. Gallagher Survey No. 788, is location 1,250 feet to east line and 1,625 feet to south line. Pilgrim Oil Co.'s No. 2 Blackaller, James Gouley Survey, is shut down at 3,218 feet waiting on rock bit.

Fayette County

Marshall & Moore's No. 1 John A. Kerr, M. Muldoon League No. 5, located about 250 varas south of north line and little west of center, is shut down at 2,078 feet and will resume within a short time. National Oil Co.'s No. 1 J. C. Melcher, S. M. Williams League No. 1, located 300 feet to north and east lines, is drilling at 1,380 feet in hard rock. R. E. Pahlon's No. 1 Cervenka, Fayette County School Lands, is drilling at 3,200 feet.

Goliad County

Booth McCarson's No. 1 E. V. Murray, Goliad Survey No. 3, is location 200 feet to west line and 150 feet to south line.

Gonzales County

Alexander & Smith's No. 1 Billings, G. Gwinn Survey, NW cor., has derrick up and part of the rig on the ground.

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Joe Bruner's No. 1 Miller, Richard Heath Survey, 3,040 feet to north line and 200 feet to east line, is preparing to resume drilling after shut down. Dunning & Pierce's No. 1 Keepers, R. Ward Survey, is standing at 203 feet. W. D. Flynn's No. 1 Wilhausen, S. Bateman Survey, east central part, is drilling at 5,012 feet. W. G. Malone's No. 1 Staton, J. M. Salinas Survey, 375 feet to southwest lines and 1,275 feet to northwest lines, is shut down at 400 feet. L. P. Unkel's No. 1 Lumm & Bouldin, R. Ward Survey, Block 10, located 570 feet to CSL, is moving in heavier rig to resume drilling at 380 feet.

Guadalupe County

Pat Armstrong's No. 1 Halm, Wakefield Survey, had leases tied up and is getting new assignments. G. A. Green's No. 1 B. B. Dix, Ira Nash Survey, 610 feet to north of road and 320 feet to east line, is drilling at 565 feet. J. J. Christie's No. 1 Taylor Thomas, Gustavus Chotwell Survey, 1,100 feet to southwest lines and 1,130 feet to southeast lines, at 1,063 feet had secured longer bailing line to reach to bottom. Miller Brothers' No. 1 G. Springs, E. Cortari Survey, 450 feet to west line and 775 feet to south line, at 1,987 feet drilled out plugs and will go through Austin before testing. T. H. Poole's No. 1 C. Woehler, John King Survey, 310 feet to north line and 210 feet to east line, is drilling at 1,400 feet. Shell Petroleum Corp.'s No. 1 Charles Grein, Mansola Survey, is drilling at 1,-250 feet. Simms Oil Co.'s No. 1 E. Jandt, J. D. Clements Survey, 150 feet to north and west lines, is drilling at 1,037 feet in shale.

Hays County

Estess-Moore & King's No. 1 C. N. Sledge, Hunton & Jones Survey, 285 feet to northwest lines, is standing at 804 feet.

Jackson County

The Texas Company's No. 1 W. C. Moore, I.&G.N. Survey No. 208, located 5,108 feet to south line and 150 feet to west line, is drilling at 3,091 feet. Wright Brothers' No. 2 Classen is drilling at 3,-500 feet; No. 6 Drushell is deepening.

Karnes County

W. E. Hewitt's No. 1 W. E. Porter, 6 miles south of Runge, is drilling.

Kinney County

Lloyd Oil Co.'s No. 1 G. Bedell Moore estate, Survey 117, is location 1,320 feet to CNL. Mardon Oil Co.'s No. 1 Jim Clamp, Survey 346, Section 1,492, is drilling at 2,508 feet in upper part of the Edwards.

Lavaca County

The Texas Company's No. 1 Russek, H. Martin Survey, 150 feet to south and west lines, is drilling at 1,367 feet.

Maverick County

Ryan Consolidated Petroleum Co.'s No. 2 Indio Ranch, Seection 7, is at 1,320 feet testing. Rycade Oil Corp.'s No. 2 Chittim, reported abandoned recently, has been shot at 2,410 feet with no beneficial results; No. 3 Chittim, Section 116, Block 7, 175 feet north of No. 1, is drilling at 2,210 feet; No. 3 Sullivan, Section 71, Block 7, is drilling at 5,405 feet with no increase in 2,000,000 feet of gas found at 5,125 feet.

Medina County

W. M. Allen's (Webster) No. 1 Haeglin, J. Reed Survey No. 579, located 300 feet to CNL, is drilling at 100 feet. California-Medina's No. 1 Rothe, Survey 1,012, is shut down at 3,278 feet. F. M. Cline's No. 1 T. J. Bendele, Survey 593, located 600 feet to west line and 150 feet to south line, at 815 feet is showing oil said to cover slush pit. Carl G. Cromwell's No. 1 Taylor, Section 135, Block 28, located 210 feet to north line and 155 feet to east line, is shut down at 350 feet. Donaldson Oil Development Co.'s No. 1 Adams Co., Survey 25, located 160 feet to east line and 1,227 feet to south line, is at 2,535 feet in top of chalk with strong odor of oil. Lynch and others' No. 1 Mott is at 503 feet waiting on pipe. North & South Development Co.'s No. 1 Charles Nehr, Survey 441, located 150 feet to south line and 7,479 feet to east line, is drilling at 3,512 feet in pink lime, probably base of Glenrose or top of Trinity. Richardson's No. 2 Tom Bendele, 75 feet north of No. 1, is standing at 937 feet with oil showing at 915 feet. Cecil Switzer's No. 2 Zerr is getting ready to start. E. R. Thomas' No. 1 W. J. Conger, J. J. Keppler Survey No. 459, is location 200 feet to north and east lines.

McMullen County

J. F. Locke's No. 1 Genser, J. T. Robbins, is location in west central part.

Nueces County

Nueces River Basin Development Co.'s No. 1 F. C. Allen, G. Farrier Survey, 1,596 feet to south line and 474 feet to west line, is standing at 2,908 feet.

Refugio County

Blanco Creek Oil Co.'s No. 1 St. John, J. Scott Survey, 708 feet to northwest lines and 3,074 feet to northeast lines, is drilling at 2,220 feet. Dunlap & Wilkinson's No. 1 Rooke, 10 miles south of gas field, is standing at 2,750 feet. J. M. Davis and Tom Horn's No. 1 Howard, Section 8, located 600 feet to north line and 2,640 feet to east line, is drilling at 2,300 feet. Magnolia Petroleum Co.'s No. 1 Glenewinkle, J. Scott Survey, 330 feet to south and east lines, is drilling at 2,815 feet in gas sand.

San Patricio County

C. I. Albertson's No. 1 Boscamp, W. R. Hazen Survey, Block 10, located 200 feet to CNL, is standing at 1,420 feet. George B. Pickett's No. 1 Whitworth, NW NW, Section 60, is standing at 3,250 feet.

Travis County

Flynn Brothers' No. 1 St. Edwards University, is drilling with spudding machine.

Uvalde County

Pure Oil Co.'s No. 2 J. D. Smythe, G.C.&S.F.R.R. Survey No. 687, located 1,920 feet south and 265 feet east of No. 1, is drilling at 657 feet.

Victoria County

Houston Oil Co.'s No. 2 Dr. Allen Kyle, one-half mile east of Nursery, is drilling at 1,160 feet.

Zavala County

Col. Ike T. Pryor's No. 2 fee, Pryor ranch, is drilling at 1,075 feet. Tritex Oil Co.'s No. 1 Clay Burns, 2 miles northwest of gas wells on the West ranch, is drilling at 355 feet; No. 1 Childress is location in townsite of LaPryor.

SOUTHWEST TEXAS FIELDS

(Continued from Page 57)

059 feet made salt water and has been abandoned.

Refugio County

Houston Gulf Gas Co.'s No. 7 James Agnes Lambert at 5,211 feet is abandoned dry.

Travis County

Mid-Kansas Oil & Gas Co.'s No. 1 P. Wolff, G. C. Jennings Survey, at 1,230 feet has been plugged and abandoned.

NEW LOCATIONS

Bastrop County

The Texas Company's No. 2 Yoast, A. Garcia Survey, is location 150 feet to northwest and southwest lines.

The Texas Company's No. 3 Yoast, A. Garcia Survey, is location 150 feet to northwest lines and 450 feet to southwest lines.

Cranfill & Reynolds' No. 1 C. R. Daywood, Addison Litton Survey, 450 feet to northwest corner, in Cedar Creek townsite, is drilling at 1,925 feet in chalk topped at 1,685 feet.

Gulf Production Co.'s No. 2 Yoast, A. Garcia Survey, is location 300 feet east of No. 1.

Caldwell County

Cranfill & Reynolds' No. 1 Northcoot, J. Radford Survey, 150 feet to northeast and southeast lines, is rigging up.

Humble Oil & Refining Co.'s No. 5 W. O. Allen, Gerren Hinds Survey, is location 160 feet to south line and 760 feet to west line.

Humble Oil & Refining Co.'s No. 6 W. O. Allen, Gerren Hinds Survey, is location 150 feet to north line and 868 feet to south line.

Humble Oil & Refining Co.'s No. 2-A Moses & Baggett is location.

Humble Oil & Refining Co.'s No. 5-A Moses & Baggett, Gerren Hinds Survey, is location 804 feet to south line and 150 feet to east line.

Humble Oil & Refining Co.'s No. 6-A Moses & Baggett, Gerren Hinds Survey, is location 1,158 feet to south line and 150 feet to east line.

Humble Oil & Refining Co.'s No. 7-A Moses & Baggett, Gerren Hinds Survey, is location 150 feet to south line and 695 feet to east line.

Humble Oil & Refining Co.'s No. 6 J. B. Tiller, Gerren Hinds Survey, is location 150 feet to north line and 750 feet to west line.

William F. Morgan's No. 1 C. Malone, A. Floyd Survey, is location 150 feet to north and west lines.

Shell Petroleum Corp.'s No. 4 R. W. Malone, A. Floyd Survey, is location 150 feet to CNEL.

Shell Petroleum Corp.'s No. 4 Floyd Tiller, is location 300 feet west of No. 2.

Shell Petroleum Corp.'s No. 5 Floyd Tiller is location 300 feet west of No. 4.

Shell Petroleum Corp.'s No. 6 Floyd Tiller is location in Gerren Hinds Survey, 150 feet to south line and 1,050 feet to west line.

Sun Oil Co.'s No. 5 Malone, A. Floyd Survey, 150 feet to southwest lines and 1,486 feet to northwest lines, is drilling at 1,046 feet.

Victor Oil Co.'s No. 1 Briscoe, P. B. McCrealy Survey, is location 150 feet to south line and 150 feet west of road.

Duval County

Humble Oil & Refining Co.'s No. 14 Kohler, Survey 396, is location 495 feet to north and east lines.

Humble Oil & Refining Co.'s No. 15 Kohler, Survey 401, is location 825 feet to east line and 165 feet to north line.

Humble Oil & Refining Co.'s No. 16 Kohler, Survey 144, is location 165 feet to south and west lines.

Fayette County

Merritt and others' No. 1 Zvereck is drilling at approximately 300 feet.

Gonzales County

Indian Petroleum Co.'s No. L. F. Karnstadt, Lot 5, is location 450 feet to northwest lines and 150 feet to northeast lines.

Goliad County

J. E. Alexander's No. 1 A. Frommie is location 10 miles north of town of Goliad.

McMullen County

Natt Holman's No. 1 Shiner, Henry M. Brewer Survey, 885 feet to south of Nueces River and 500 feet to west line of survey, has derrick up and rig on the ground.

Jim Hogg County

The Texas Company's No. 1 D. Vela, Survey 582, Share 4, Henne-Winch & Fariss Field, is located 1,300 feet to west line and 150 feet to south line and is rigging up.

Webb County

The Texas Company's No. 1 Benavides, NW SE, Survey 683, Magnolia-Cole Field, is moving on 150 feet to north and west lines.

J. G. Mackay's No. 1 Richardson, Survey 5, located 150 feet to north and west lines, is moving on.

Humble Field—Duval

Humble Oil & Refining Co.-Reiter-Foster's No. 12 Kohler, Survey 403, located 1,485 feet to south line and 165 feet to east line, tested gas at 1,817-20 feet and has set casing at 1,813 feet; No. 13 Kohler, Survey 163, located 495 feet to east line and 165 feet to south line, at 1,745-47 feet, tested gas and has set casing at 1,744 feet.

Driscoll Field

Robert Driscoll's No. 14 Driscoll, Survey 448, located 2,750 feet to east line and 550 feet to south line, is drilling at 2,280 feet.

Schoolfield-O'Byrne Pool

Magnolia Petroleum Co.'s No. 4-B Hahl, Survey 61, located 150 feet to south line and 2,481 feet to east line, is drilling at 1,807 feet. S. & O. Oil Co.'s No. 2 Bowe, Survey 250, Block 21, located 220 feet to east line and 660 feet to south line, is drilling at 1,000 feet. Onyx Oil Co.'s No. 4 Krauter, Survey 250, Block 20, located 220 feet to south and west lines, is rigging up.

Randado Field—Jim Hogg

Magnolia Petroleum Co.'s No. 41 Merchants State Bank, Survey 155, located 150 feet to north and east lines, is drilling at 3,207 feet. Randado Oil Corp.'s No. 29 Palacious, Survey 291, Block 14, is testing at 1,273 feet; No. 30 Palacious, Survey 291, Block 3, is testing at 1,2[illegible] feet.

Henne-Winch & Fariss Field

A. L. Kitselman's No. 1 Lopez, Surv[illegible] 255, Block 6, located 289 feet to nort[illegible] line and 300 feet to west line, has bee[illegible] spudded in.

Alworth Field

Brooklyn Oil Co.'s No. 2 Garza, Su[illegible] vey 40, Block 6, located 450 feet to nort[illegible] east and northwest lines, is drilling at 9[illegible] feet.

Schott Field—Webb

Livingston & Payne's No. 1 Guerra-Ochoa, Survey 58, located 917 feet to ea[illegible] line and 497 feet to south line, is mov[illegible] ing on.

Reiser Field

Marts & Beaven's No. 2 Johnson, Su[illegible] vey 602, Block 10, located 150 feet t[illegible] south and west lines, is drilling at 1,0[illegible] feet. W. O. Wheatley's No. 1 Wheatley Survey 1,569, Block 3, located 847.7 fee[illegible] to north line and 305.2 feet to east line[illegible] is drilling at 2,725 feet with gas at 2,26[illegible] 48 feet.

Albercas Field

Sun Oil Co.'s No. 12-A Yeager-Strohman, Share 5, located 4,675 feet to nort[illegible] line and 150 feet to west line, has sand at 2,153-55 feet and is standing. Magnolia Petroleum Co.'s No. 15 (numbe[illegible] changed from 14) Yeager-Strohman Share 5, located 900 feet to north line and 575 feet to east line, has derrick up No. 14 Yeager-Strohman (number changed from 15) Share 5, located 1,400 feet to north line and 575 feet to east line, is drilling at 275 feet.

Rycade Oil Corp.'s No. 8 Yeager-Strohman, Share 5, located 1,950 feet to north line and 150 feet to east line, is standing at 2,145 feet. A. M. Major's No. 1 Holbien, Share 3, Block 6, is location 150 feet to north and east lines. Edward St. Albans estate's No. 4 Holbien, Share 3, Block 7, located 150 feet to north and west lines, is drilling at 1,800 feet. Newton Drilling Co.'s No. 4 Bruni, Block 56, Newton tract, 480 feet to north line and 250 feet to west line has spudded in.

Carolina-Texas Field

C. R. Miller's (Miller & Daniels) No. 1 de la Garza, Survey 48, Block 47, located 150 feet to north and east lines, is standing at 2,250 feet. W. R. Shankle's No. 1 Webster, NE SE, Survey 684, located 150 feet to south and west lines, is coring at 2,568 feet. Foster Barnsley's (Barnsley-Scharf-Kirk) No. 5 (1) Webster, NE SW Survey 684, located 510 feet to north line and 150 feet to east line, has sand at 2,619-21 feet and is drilling out plugs.

Andrews Field

Watson and others' (Cosner-Danmier) No. 2 G. Benavides, Survey 11, Block 4, located 150 feet to southeast and southwest lines, has been spudded in.

Magnolia-Cole Field

Cole Petroleum Co.'s No. 67 Benavides, Survey 412, Block 12, located 313 feet to east line and 160 feet to north line, is standing at 38 feet. Houston Oil Co.'s No. 4-D Benavides, Survey 753, Block 13, is location 160 feet to south line and 822.5 feet to east line; No. 17-D Benavides, Survey 753, Block 5, is location 160 feet to south and west lines; No. 19-D Benavides, Survey 753, Block 5, is location 660 feet to east line and 160 feet to south line; No. 1-G Benavides, west one-half, southeast one-fourth Survey 701, located 160 feet to south and east lines, is drilling at 2,220 feet.

Magnolia Petroleum Co.'s No. 1 Benavides, Survey 697, Block 10, is location 150 feet to north and east lines; No. 1 King-Benavides, Survey 694, Block 12, is location 150 feet to south and east lines; No. 1 J. G. Valdez, Survey 754, Block 15, is location 150 feet to south and east lines. Union Exploration Co.'s No. 1 Benavides, Survey 694, Block 3, located 160 feet to south and west lines, has set 12½-inch casing at 42 feet.

Jennings Field—Zapata

Charles L. McCaslin's No. 1 R. Hinnant, Survey 74, located 2,390 feet to west line and 630 feet to south line, is drilling at 100 feet. South Texas Production Co.'s No. 3 Jennings, Cerrito Blanco grant, 9,397 feet to southeast lines and 9,710 feet to southwest lines, is drilling at 1,960 feet. Killam-Dug-

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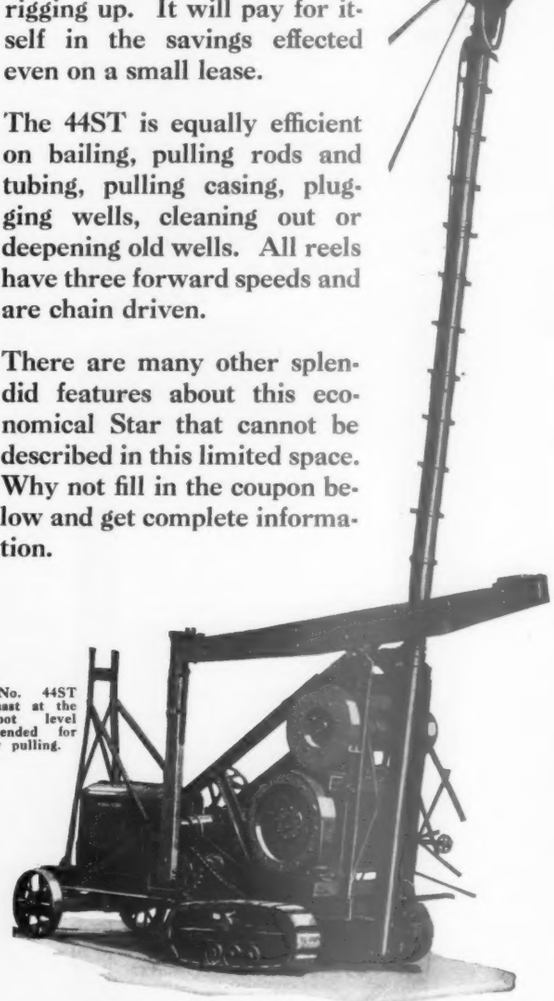

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gan's No. 4 ——, Cerrito Blanco grant, 1,511 feet to northeast lines and 627 feet to northwest lines, is drilling at 1,400 feet.

Cole Gas Field

O. W. Killam's No. 4 (1) Bruni, Survey 5, Block 2, located 150 feet to northwest and northeast lines, is drilling water well in preparation to starting drilling; No. 5 Bruni, Survey 8, Block 26, located 203 feet to southwest lines and 270 feet to northwest lines, is drilling at 1,600 feet.

Somerset Field—Atascosa

W. R. Hamilton's No. 14 R. T. Hughes, J. Sharp Survey No. 518, is location 565 feet south of No. 6.

Yoast Field—Bastrop

Judge Batts' No. 1 White, 2 miles northwest of discovery well, is shut down at 1,608 feet and will drill deeper. Gulf Production Co.'s No. 1 A. M. Yoast, A. Garcia Survey, 1,593 feet to northwest lines and 150 feet to northeast lines, at 1,462 feet was given a light shot.

Somerset Field—Bexar

Schimmel Production Co.'s No. 1 J. Frees, C.E.P.I.&M. Survey, Block 2, is location 250 feet to east line and 829 feet to south line.

Dobrowolski Field

F. H. Eckert's No. 3 Dobrowolski, Section 52, Block 4, is location 300 feet south of No. 1.

Gas Ridge Field

Medio Oil Co.'s No. 9 Cohen, 500 feet southeast of No. 7, is shut down at 470 feet.

Lockhart Field

The Texas Company's No. 2-B Branyon, John R. Miller Survey, 1,580 feet to west line and 150 feet to south line, at 2,356 feet after bailing dry filled 350 feet with oil and water in half an hour.

Bruner (Salt Flats) Field—Caldwell

W. R. Alexander's No. 1 G. W. New, James Hinds Survey, 300 feet to west line and in middle north and south, is drilling at 2,280 feet. Tip de Armond's No. 2 Carter, G. Hinds Survey, 170 feet to west line and 147 feet to north line, is location; No. 2 Carter, G. Hinds Survey, 120 feet to west line and 148 feet to north line, is trying to complete at 1,250 feet a gas well. J. S. Abercrombie Oil Co.'s No. 5 Lida Moses, Gerren Hinds Survey, is rigging up at 2,724 feet to pump.

Brawn and others' No. 1 R. W. Carter, Gerren Hinds Survey, 150 feet to south and west lines, is standing at 2,679 feet. D. F. Bryan's No. 1 Davis, Gerren Hinds Survey, is location. J. J. Capps' No. 1 G. W. New, James Hinds Survey, at 1,310 feet is waiting for boiler. C. E. Ellzey's No. 1 Taylor has set surface casing at 42 feet. Guerrin & Gastor's No. 1 Davilla, Isaac Weldon Survey, is location in SE cor. Golden West Oil Co.'s No. 2 Cora Malone, A. Floyd Survey, 200 feet to northwest lines of lease and 150 feet to northeast lines of farm, at 2,732 feet is going on the pump.

Gulf Production Co.'s No. 1 W. O. Allen, Gerren Hinds Survey, 150 feet to west line and 173 feet to south line, is drilling at 2,574 feet; No. 2 W. O. Allen, Gerren Hinds Survey, is location 450 feet to west line and 173 feet to south line; No. 1 R. W. Carter at 2,330 feet in chalk is flowing; No. 2 Carter, Gerren Hinds Survey, 450 feet to east line and 150 feet to north line, is location; No. 3 R. W. Carter, Gerren Hinds Survey, is location 150 feet to south and west lines; No. 4 R. W. Carter, Gerren Hinds Survey, is location 450 feet to west line and 150 feet to south line.

No. 7 Connally is at 2,330 feet, bailing in the chalk; No. 4 J. J. Davis, A. Floyd Survey, is location 150 feet to east line and 350 feet north of No. 2; No. 7 W. L. Smith has derrick up 300 feet north of No. 6; No. 8 W. L. Smith, A. Floyd Survey, is at 2,696 feet, drilling; No. 1 Jim Smith at 2,717 feet total depth is waiting on standard equipment; No. 1 M. J. Tiller, Gerren Hinds Survey, 150 feet to northeast corner of lease, has derrick up; No. 2 M. J. Tiller, Gerren Hinds Survey, 300 feet west of No. 1, has derrick up.

No. 3 M. J. Tiller, Gerren Hinds Survey, 300 feet west of No. 2 and 150 feet to north line, is location; No. 4 M. J. Tiller, Gerren Hinds Survey, is location 150 feet to south line and 275 feet west line; No. 5 M. J. Tiller, Gerren Hinds Survey, is location 575 feet west line and 150 feet to south line; No. 1 J. D. Wright, Gerren Hinds Survey, location 450 feet to south line and 1 feet to west line. Humble Oil & Refining Co.'s No. 1 W. O. Allen is drilling at 2,670 feet in Georgetown topped at 2,622 feet; No. 2 W. O. Allen is location; No. 4 W. O. Allen, Gerren Hinds Survey, is location 300 feet east of No. 2 and 150 feet to north line.

No. 1 Moses & Baggett, 300 feet west of No. 2, is drilling at 2,320 feet in top of the chalk; No. 3 Moses & Baggett, 300 feet north of No. 2 and 150 feet to east line, is location; No. 4 Moses & Baggett, 300 feet west of No. 1 and 1 feet to south line, is location; No. 2 B. Johnson, James Hinds Survey, 3 feet east of road and 350 feet to east line, at 2,642 feet is estimated good for 125 bbls. and is putting in standard equipment; No. 3 J. B. Tiller is at 2,6 feet; No. 4 J. B. Tiller is drilling at 2,7 feet in the Edwards; No. 5 J. B. Tiller, Gerren Hinds Survey, is location 150 fe to north line and 300 feet east of No.

No. 1 J. J. Davis, A. Floyd Survey, 150 feet to north line and 453 feet west line, is drilling at 2,600 feet in t of Del Rio; No. 2 J. J. Davis, A. Floyd Survey, 150 feet to northwest and south west lines, is drilling at 2,695 feet; No. 3 J. J. Davis, A. Floyd Survey, 150 fe to north and west lines, is drilling a 2,288 feet, showing oil; No. 4 J. J. Davis, A. Floyd Survey, 300 feet north of No. 2 and 150 feet to east line, is location; No. 1 W. W. Hickman, Gerren Hinds Survey, 150 feet to north and east lines, has steel derrick up.

No. 3 William Smith is drilling at 2,568 feet showing oil; No. 4 William Smith, A. Floyd Survey, 150 feet to north line and 440 feet to east line, is drilling at 2,655 feet in Georgetown; No. 2 Floyd Tiller, Gerren Hinds Survey, 15 feet to north and west lines, is location. C. E. Lange's No. 1 W. P. Walker, Gerren Hinds Survey, 150 feet to north and west lines, is standing at 2,77 feet; No. 2 W. P. Walker, same survey, is standing at 1,500 feet; No. 1 Kate Colding, A. Floyd Survey, 150 feet to northwest lines and 112 feet to northeast lines, at 2,687 feet total depth, shot at 2,480 feet in the chalk with 150 quarts and is showing oil.

Lutex Oil, Inc.'s, No. 6 Davis, A. Floyd Survey, is at 2,763 feet with 30 quarts of nitro stuck in the hole above a bridge. Linderman-Atlantic's No. 2-A W. F. Davis, at 2,726 feet is swabbing some oil and water. Luling Oil & Gas Co.'s No. 3 Carter at 2,918 feet is to pull casing and plug back and test in chalk. Speer Well Oil Co.'s No. 1 E. L. Mayton, Hector McNeil Survey, is sidetracking at 2,810 feet. H. C. Ratcliff and others' No. 1 Cora Malone, A. Floyd Survey, 150 feet to north and west lines, is standing at 2,694 feet.

Shell Petroleum Corp.'s No. 1-B Carter, Gerren Hinds Survey, 150 feet to south and west lines, has derrick up; No. 1 Malone is location; No. 3 Malone, A. Floyd Survey, is drilling at 2,459 feet; No. 2 William Moses, 300 feet north of No. 1, is in limestone at 2,580 feet; No. 3 Moses, A. Floyd Survey, 150 feet to south line and 450 feet to east line, is drilling at 2,452 feet in Taylor marl; No. 3 W. L. Smith, A. Floyd Survey, 150 feet to south and east lines, at 2,695 feet is to deepen to Edwards; No. 1 Floyd Tiller, Gerren Hinds Survey, 150 feet to south line and 900 feet to east line, is at 2,707 feet waiting on cement; No. 2 Floyd Tiller, Gerren Hinds Survey, 4 feet to east line and 150 feet to north line, has set surface casing at 53 feet.

No. 1 J. Smith, A. Floyd Survey, 15 feet to north and east lines, is drilling at 2,710 feet. The Texas Company's No. 1 Carter, Gerren Hinds Survey, is location 150 feet to south and east lines; No. 1 Lee Moses, Gerren Hinds Survey, 150 feet to CWL, is at 2,641 feet rigging up to pump; No. 3 Merriweather is setting casing in the top of the chalk; No. 5 Merriweather, A. Floyd Survey, 150 feet to northeast and southeast lines, has derrick up; No. 6 Merriweather, A. Floyd Survey, 150 feet to northwest lines

and 70 feet to northeast lines, is drilling at 2,345 feet in the chalk. Turman & Brown's No. 1 Beversdorff, A. Floyd Survey, is location 150 feet to southeast lines and 131 feet to southwest lines.

Sullivan Field—Gonzales

Cranfill & Reynolds' No. 1 J. F. Webb, Winslow Turner Survey, 150 feet to north and east lines, is at 3,792 feet fishing for drilling material; Empire Gas & Fuel Co.'s No. 1 River Bed, Winslow Turner Survey, 133 feet to north line and 10 feet to east line, is moving in rig. The Texas Company's No. 1 J. E. Lamkin, Winslow Turner Survey, 800 feet to northwest lines and 200 feet to southwest lines, is location.

Luling Field Guadalupe

A. B. A. Oil Co.'s No. 4 Britton Harris is shut down at 1,250 feet for repairs. Magnolia Petroleum Co.'s No. 2 H. A. Cartier, Harriett Cottle Survey, is location 450 feet to northeast lines and 150 feet to northwest lines.

Kingsville Field—Kleberg

Humble Oil & Refining Co.'s No. 4 Flato, Section 40, Lot 10, located 250 feet to east line and 450 feet to north line, is drilling at 4,545 feet.

Agua Dulce Field—Nueces

Agua Dulce Oil & Gas Co.'s No. 1 B. F. Wolcoot, Section 1, located 2,780 feet to east line and 150 feet to south line, is drilling at 650 feet. Milam Drilling Co.'s (Davis-Horn and others') No. 1 Thomas Ragland, SW cor. Lot 13, Mantor & Briggs Subdivision, is drilling at 2,054 feet. R. & G. Corp.'s No. 1 Brown, George H. Paul Subdivision, Section 87, is location; No. 2 Ed Allen, Lot 5, Section 6, about 1,900 feet east of No. 1, is location; No. 1 Yakey, Lot 2, Section 5, located 150 feet to west line, has spudded in, set surface casing and resumed drilling.

Refugio Field—Refugio

Houston Oil Co.'s No. 5 Wilson Heard, 300 feet west of No. 4, is drilling; No. 1 Blanco River is location. Houston Gulf Gas Co.'s No. 4 J. M. O'Brien has spudded in; No. 1 Fox at 3,900 feet is drilling, with no sand at 3,700 feet; No. 3 Fox, Lot 4, Block 5, at 3,300 feet is trying to get on the bottom. Mission Drilling Co.'s No. 3 Rogers Estate is moving in rig; No. 1 Nellie B. Cummings, at 3,800 feet is waiting on cement to set. William M. Morgan's No. 1 Rooke at 4,638 feet cored sandy shale with no oil. Union Exploration Co.'s No. 1 Rooke is drilling at 2,800 feet; No. 1 Holmes Heard at 3,720 feet is making salt water and oil. Union Exploration Co.-William F. Morgan's No. 2 Leslie Adkins, Tract 3, Block 8, at 3,725 feet is standing and may drill deeper.

CANADIAN FIELDS

(Continued from Page 61)

ment of Dalhousie acreage by drilling four deep wells, of which Dalhousie's Nos. 1, 5 and 6 proved commercial producers, this work being done in consideration of the 51 per cent stock interest. R. B. Bennett at his own request and owing to pressure of public duties was relieved of the position of trustee, a full directorate being elected comprising A. M. McQueen, Alex Hannah and J. H. McLeod, representing the Royalite Oil Co., and J. K. Riordan and A. C. Newton representing the other shareholders. The financial statement showed, for the year, receipts amounting to $142,-007.00 and disbursements of $23,690.57, leaving a cash balance of $118,317.03. The receipts included $50,485.25 from crude oil sales, $54,551.05 from crude naphtha, and $690 from gas sales. Light crude production from two wells now aggregate around 75 bbls. a day, with Dalhousie's No. 1 crude naphtha well frozen. It is understood that development work will be continued throughout the coming season, though no details of the company's plans have been announced.

First Deep Test

McLeod Oil Co.'s No. 4, LSD 16, Section 1-20-3w5, is shut down at 4,390 feet, being 660 feet below the top of the Madison lime, which was entered by the drill at 3,730 feet. At 4,370 feet the drill passed out of the white limestone, but entered a gray limestone. Work was temporarily discontinued owning to the extreme cold weather. There is some uncertainty as to whether the drill has gone clear through the Madison, if so, this is the first test in the Turner Valley to drill through the deep producing formation. McLeod's No. 4 got a big wet gas flow at the usual depth in the lime, estimated to be nearly as large as that of Royalite's No. 4, the crude naphtha recovery, however, was considerably less, and the production failed to hold up. Drilling has been carried deeper in the effort to restore production. The test is in good shape for further deep drilling, and may be continued for another 500 feet. Some additional wet gas was secured by carrying the test deeper into the lime.

McLeod's No. 1, same LSD, which has been frozen since last fall in the deep lime at 3,915 feet, will be cleaned out and carried deeper. A bit was lost in the hole in a previous effort to restore production, and the well may be shot in as effort to dislodge the lost tool. When in full production the well made as high as 193 bbls. a day. McLeod's No. 3, temporarily shut down owing to extreme cold, has also resumed; this test is at 4,871 feet, and fishing with a bit and a lot of diamond drill rods in the hole.

Shareholders of the McLeod Oil Co. will consider a proposal to increase the company's capital at a meeting on February 22. It is proposed to increase the present capitalization of $250,000 to $500,000, the new stock to be sold at or near market value to finance further development work. An alternative proposal for financing operations has been made by W. D. Lundy on behalf of unnamed interests, offering a loan of $50,-000, and the drilling of four more wells on a 50-50 basis, the loan itself to be repaid out of present and future production.

Okalta Oils' No. 2, LSD 8, Section 1-20-3w5, in light crude production at 3,170 feet, is reported pumping between 90 and 100 bbls. a day. Okalta's No. 1, LSD 1, same section, is still frozen in the deep lime. A special quality of diamond drill rods is being provided for use in cleaning out the well.

Over the Derrick

Regent Oil Co., LSD 16, Section 1-20-3w5, has resumed drilling in the deep lime at 3,847 feet; the well is making some wet gas with a reported crude naphtha recovery of 40 bbls. a day. Recently a spectacular "blow" shot 100 bbls. of crude naphtha over the derrick.

Spooner Oils' No. 2, Section 24-20-3w5, diamond drill test, is at 5,095 feet, about 30 feet in the deep lime, and temporarily shut down owing to cold weather. New McDougall-Segur Oil Co.'s No. 2, LSD 14, Section 12-20-3w5, has resumed drilling at 4,620 feet, after splicing a broken cable; open 8¼-inch hole will be carried to the deep lime when casing will be cemented. Illinois-Alberta's No. 2, same LSD, is standing cemented in the deep lime at 3,550 feet, and will not resume drilling until the weather moderates.

Calmont Oils' No. 1, LSD 2, Section 1-20-3w5, is shut down at 5,650 feet owing to cold weather. Before the shut down the bridge formed by the three shots was cleared out, without restoring the wet gas production developed by the third shot.

Mayland Oil Co., LSD 10, Section 17-19-2w5, left the Home sands at 4,790 feet and is drilling in the lower Fernie shales at 4,850 feet. Oil from the upper sands, around 60 bbls. a day, has been temporarily shut off by 8¼-inch casing, and the hole will likely be carried to the deep lime. East Crest Oil Co., LSD 5-6, Section 16-19-2w5, is reported again drilling at 3,450 feet, after a shut down due to cold weather. Advance Oil Co.'s No. 5, LSD 16, Section 19-19-2w5, is reported drilling close to the Dakota sand at 2,895 feet.

British Dominion Oil Development Corp.'s No. 2, LSD 6, Section 12-20-3w5, is shut down on top of the McDougall-Segur sand at 3,550 feet, with 150 feet of light crude in the hole. Drilling will resume when the weather moderates. Model Oils, LSD 8, Section 22-20-3w5, is installing a new cable at 3,460 feet. Small oil and gas shows were met in the Kootenays, and the Home sands are looked for at 3,900 feet. United Oils' No. 2, LSD 2, Section 24-20-3w5, has resumed drilling on top of the Home sand at 5,370 feet. Freeman-Lundy Syndicate, LSD 10, Section 1-20-3w5, is resuming at 600 feet after a cold weather shut down.

In the Jumping Pound district, west of Calgary, Imperial Oil's Bow River No. 2, LSD 11, Section 31-24-3w5, is standing cemented at 1,066 feet. In the Highwood district, southern foothills, Imperial's Highwood No. 1, LSD 3, Section 36-18-3w5, is drilling at 4,051 feet.

Skiff Field

In the Skiff Field, southern Alberta, Imperial-Devenish's No. 3 offsetting the discovery well in LSD 5, Section 27-5-14w4, is drilling around 2,508 feet, in spite of difficult drilling conditions, with the mercury at times down to 60 below. In the Milk River district, Alberta Pacific Consolidated Oils, Ltd., of Calgary has filed on 1,500 acres west of Milk River and adjacent to its former filings. A contract is being let for the company's No. 1 well in this area, to spud in this spring.

In the Pincher Creek district, southeastern Alberta, Alberta Gas & Fuel Co.'s Doherty No. 3, on Drywood Creek, in the southern part of the field, is reported drilling around 2,700 feet and making headway in spite of extremely difficult weather conditions. It is unofficially reported that the log here checks very closely with logs of the Turner Valley Field and that conditions are found very similar, though the test is not sufficiently deep for definite results. The location is about 200 yards from Imperial Oil's Twin Butte No. 1, which was abandoned at 2,600 feet. It is also reported that in the spring the drilling outfit from the abandoned Doherty No. 2 will be moved to the region east of Vulcan, recently geologized and surface drilled by the Hudson's Bay-Marland Oil Co.

Hudson's Bay-Marland

Hudson's Bay-Marland Oil Co. is reported making preparations for two commercial tests in Alberta this season, in addition to the No. 1 test started last year in the Viking gas field. Four rigs are at present busy making shallow structure tests in a number of areas, and similar work was done to some extent last season upon the more promising structures geologized by the company's experts. A number of tentative locations have been selected for commercial tests, and two of these will later be chosen for definite drilling.

In the Wainwright Field, Wainwell Oils' No. 2, LSD 15, Section 36-44-7w4, is drilling below 1,400 feet. Rotary tools are being used to the top of the sand, and the well will be drilled in with cable tools. Hargal Oils' No. 1, LSD 13, Section 2-45-7w4, is re-erecting the derrick blown down in the recent storm, and will spud in this month. In the Ribstone Field, Ribstone Oils' No. 2, LSD 5, Section 2-47-1w4, is drilling at 1,230 feet.

Paul von Weymarn of Oslo, Norway, is organizing Weymarn Oils, Ltd., to carry on development work in the Clearwater area of northern Alberta. The company is incorporated under Dominion charter with authorized capitalization of 250,000 no par shares, applicants for the charter including A. F. Duncan, T. L. Cross and S. T. Bigelow of Edmonton. Last year Paul von Weymarn, in conjunction with his brother, Peter von Weymarn of New York, drilled in the Clearwater area, 370 miles north of Edmonton. This is the northermost point in Alberta at which drilling has been carried on, the Slave Lake, Hay River and Fort Norman drilling several years ago having been in the Northwest Territories.

The Von Weymarn test started drilling practically in the lime, got an oil show at 340 feet, and was shut down for the winter at 500 feet. Subsequently the Von Weymarns secured further acreage on the same structure, and now hold several thousand acres. Their activities last summer started a stampede, and Calgary and Edmonton men now hold considerable acreage. The structure is 18 miles long and 6 miles wide, paralleling the Clearwater in bush country, and is on the edge of the pre-Cambrian shield. It is possible core drilling will be undertaken in outlying districts in the hope of defining further similar structures under the glacial drift. European capital is reported to be interested in the Von Weymarn operations, and their program for the coming season includes three additional tests, one in the Clearwater area and two elsewhere. This part of the Clearwater is featured by geysers in the bed of the structure in spite of below zero temperatures. The river is flanked at some distance by low hills, but the early drilling will likely be done in the wide flats.

Ontario Fields

In the Ontario fields, the Petrol Oil & Gas Co. is carrying on further development work on its leases on the Six Nations Indian Reserve in Tuscarora Township, Brant County, where recent drilling has opened a small gas field. The company previously had two deep wells in Dover Township, Kent County, producing gas from the Trenton limestone. These wells are reported to have maintained production in 1928 with reduced operating costs, this production financing the Tuscarora development. In Tuscarora Township, the Clinton, White Medina and Queenston formations have already been tested and have proven productive to a fair degree, and development work will be continued in these formations. The four latest wells show open flows of 105,000, 55,000, 105,000 and 63,000 feet a day, and a fifth well is now drilling and near completion. Two miles of line have been laid to deliver the gas to the Dominion Natural Gas Co. which will use it to help the Brantford supply. The Six Nations Indian Reserve covers 43,696 acres; the Petrol company has already leased 10,-000 acres, and negotiations for the remaining acreage are practically concluded, as a preliminary to further development. The acreage is not far from the Onondaga Field, which at one time had a fair oil and gas production.

LEGAL

DEPARTMENTAL OIL AND GAS MINING LEASES

Will be sold at Public Auction at the Kiowa Indian Agency, Anadarko, Oklahoma, February 21, 1929. Land located in Comanche, Cotton, Caddo, Grady and Stephens Counties, Oklahoma. For description of land and further information, write J. A. BUNTEN, Dist. Superintendent, Kiowa Indian Agency, Anadarko, Oklahoma.

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Natural Gasoline Manufacture

May Manufacture Ethylene Glycol From Waste Gases

An important project looking toward the commercial utilization of the waste gas from the Turner Valley Field in southern Alberta was disclosed at Ottawa recently in connection with an application of the Fairview Chemical Co. of Regina, Saskatchewan, for removal of customs duty on ethylene glycol when used as an antifreeze mixture. This product is manufactured only in the United States and Germany, and is admitted free of duty to Canada when used in the manufacture of explosives. The only manufacturing process in Canada is the addition of water to the ethylene glycol.

The request was supported by the Canadian National Carbon Co. of Toronto, a subsidiary of the United States company which produces ethylene glycol; and was opposed by Lever Brothers, soap manufacturers, of Toronto, who claimed removal of the tariff would interfere with the sale of glycerine, a by-product of their plant, for use in antifreeze mixtures.

In the course of the proceedings Dr. A. W. G. Wilson, chief of the Mineral Resources Branch of the Mines Department stated that two companies are experimenting with the use of waste gas from the Turner Valley Field with the object of producing from this gas the essentials of an antifreeze mixture. One of these companies is planning to utilize waste gases from various fields between Calgary and the international boundary, and has agreed to supply Canadian requirements before selling any of their product in the United States.

The extent or nature of the experiments has been kept secret by the companies interested, but it is understood that considerable progress has been made, and that commercial operations may be undertaken this year. Ethylene glycol is the simplest glycol and corresponds to ethyl alcohol, the methyl glycol being unknown. Its uses as an antifreeze compound has been made popular because of its high boiling point and should ethylene gas be cheaply manufactured as a by-product of the natural gasoline industry its use may reach considerable proportions.

Ethylene glycol is a thick colorless liquid and has a rather sweet taste. It boils at 197.5 degrees Fahrenheit and is miscible in water and alcohol in all proportions. Ethylene glycol is formed when ethylene is oxidized with a cold, dilute alkaline solution of potassium permanganate. Commercially, it is also prepared by halogenating the ethylene gas and then this is boiled with a dilute caustic solution in a reflux condenser arrangement.

TO ERECT PLANT

The El Camino Oil Co., an independent jobbing concern at Los Angeles, has announced plans to build a small gasoline absorption plant in Sunshine Acres, Calif. The company also expects to build a small refinery in Los Angeles. A site has been purchased at Margaret Road on the Santa Fe Railroad 2 miles south of Santa Fe Springs. The company has distributed gasoline in the Los Angeles area for several years.

LONG BEACH PLANT

The Western Oil & Refining Co. has completed the installation of a natural gasoline plant in the Long Beach Field of California. The company recently acquired a half interest in the producing properties of the Olympic Refining Co. in that field.

ANNOUNCE PROGRAM FOR PLANT OPERATORS' MEETING AT RANGER

Eight papers dealing with the practical phases of plant operation will be presented at the annual plant operators' meeting to be held at Ranger, Tex., February 26, under the sponsoship of the Natural Gasoline Association of America. The meetings have been held yearly for several years and in the past have been largely attended by the natural gasoline fraternity of the Ranger area. The meetings will be held at the American Legion Hall at Ranger.

Dr. E. R. Lederer, vice president of the Texas Pacific Coal & Oil Co., Fort Worth, is general chairman of the meeting. The following program has been announced:

Morning session, 10 to 12—

"Operation and Care of Electrical Equipment," by Clifford Clegg, manager, Texas Electric Service Corp.

"Absorption Oils," by P. Beo, director of research, Arab Gasoline Co.

Discussion to follow each paper.

Recess for barbecue lunch, furnished by the Natural Gasoline Association of America.

Afternoon session, 2 to 4:30—

"Distillation Apparatus in the Use of Natural Gasoline Manufacturing," by J. E. Kobernick, vice president and general manager, Engineering Research & Equipment Co.

"Belts," by John A. Guffey, Industrial Belting Co.

"Repressuring and Its Relation to Natural Gasoline Production," by Ed Guidinger, Phillips Petroleum Co.

"Operation and Maintenance of New Ford Equipment," by E. Banham, Ford Agent, Breckenridge, Tex.

Discussion to follow each paper.

Evening session, 7 to 8—

"Accidents in Natural Gasoline Plants," by C. L. Hightower, safety director, Texas Pacific Coal & Oil Co.

"Benefits of Safety to the Operator and His Family," by Don Wallace, safety director, Mid-Continent Oil & Gas Association.

After the discussion, following these papers, a musical program will be furnished for entertainment.

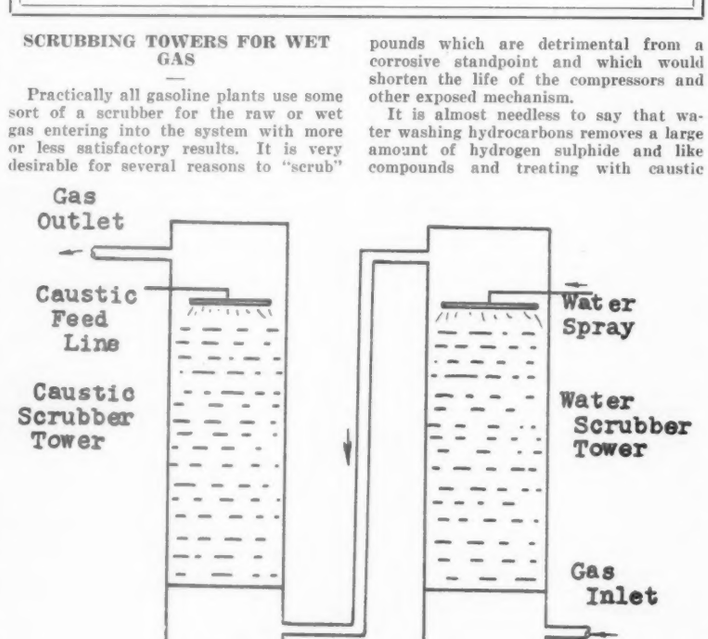
Note—It is expected that the evening session will be attended by the operators and their families.

A PRACTICAL SUGGESTION

SCRUBBING TOWERS FOR WET GAS

Practically all gasoline plants use some sort of a scrubber for the raw or wet gas entering into the system with more or less satisfactory results. It is very desirable for several reasons to "scrub" or treat the raw gas before it enters the system. Among the advantages is that it removes several undesirable compounds which are detrimental from a corrosive standpoint and which would shorten the life of the compressors and other exposed mechanism.

It is almost needless to say that water washing hydrocarbons removes a large amount of hydrogen sulphide and like compounds and treating with caustic soda further converts and removes the sulphur compounds which are generally present in the gas and which form sulphurous and sulphuric acids in the presence of moisture during compression in the cylinders of a gasoline plant.



A set of scrubbing towers which have

(Continued on Page 137)

Practical suggestions by those connected with the construction and operation of natural gasoline plants are invited. Payment will be made as soon as suggestions are accepted. Address all communications to the Natural Gasoline Department, The Oil and Gas Journal, Tulsa.

TO BUILD LARGE PLANT IN RICHLAND, LA., FIELD

SHREVEPORT, La., Feb. 11.—The same producing companies operating in the Monroe and Richland gas fields of northeast Louisiana that will be owned of the Mississippi Valley Fuel Co. formed recently to build a gas line from this territory to St. Louis, will build an oil absorption plant near Alto, in the Richland Field. The plant will extract the gasoline from the gas before it goes into the line, according to W. J. Parish vice president and general manager of the Industrial Gas Co.

The plant is to be built and in operation prior to completion of the St. Louis line a year hence. It will be the first gasoline plant to get under way in the Richland Field, Louisiana, though Richland gas is being processed through plants in the Monroe Field. The gas capacity will be 100,000,000 feet per day with a gasoline recovery of approximately 30,000 gallons. The Stearns-Roger Manufacturing Co. of Denver, distributors of J. A. Campbell equipment, will build the plant which is estimated to cost around $300,000.

Standard Oil Co. of New Jersey, Columbian Carbon Co., United Carbon Co., Electric Power & Light Corp., Moody-Seagraves Co. and Palmer Corp., that are members of the Mississippi Valley Fuel Corp., as it is known at present under preliminary or tentative organization, will own the enterprise. The program involving the St. Louis line, the gasoline plant and the source of gas for both contemplates the companies named furnishing the gas to the new gasoline company. From this plant it will be delivered to the pipe line company for transportation and delivery to consumers in the St. Louis industrial area. Pipe line and gasoline companies will have their independent organization but will be owned by the interests supplying the gas.

NEW ABSORPTION PLANT FOR MICHIGAN FIELD

MUSKEGON, Mich., Feb. 9.—Erection of a $200,000 gasoline absorption plant and gathering lines to be completed by May 15 was announced by Paul O. Sergent, of the Murchison Oil Co., Dallas, Tex.

Contracts have been closed with a sufficient number of Muskegon operators to warrant erection of the plant. Experiments have indicated that gas from the Muskegon wells will make from .5 to 1.19 gallons of gasoline per 1,000 feet.

The proposed absorption plant will be located in Laketon Township in the southeast corner of the John Thompson lease of the Johnson Oil Refining Co., SW NE Section 12-10-17. Plans are being drawn by the Gilmore Engineering Co. of Tulsa.

Gasoline content of the Muskegon gas is expected to increase with the age of the wells.

OPERATING FIRST PLANT

The Smith Petroleum Co. is now operating the first gasoline plant of the oil-absorption type in the Lawndale Field of California. The plant at present is extracting the gasoline from approximately 5,000,000 cubic feet of gas daily. The gas has a gasoline content of 2 gallons per 1,000 cubic feet.

A. F. CLARK DIES

Arthur F. Clark, 55 years old, engineer for the Hurley Gasoline Co., died suddenly Friday, February 8, at his home in Tulsa. Death was due to apoplexy. Mr. Clark has been actively identified with natural gasoline business for several years selling plant equipment.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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POSITIONS WANTED

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CALYX CORE DRILL EXPERT—15 years' experience; speaks Spanish and Portuguese. Willing to go anywhere. Tor O. Sjobom, 1611 Rose St., Berkeley, Calif.

LEASES—PRODUCTION

WILL LEASE—160 acres close to Pecos Valleys Oil Co. well, North Pecos County, Texas. Owner, 1232 W. 45th St., Oklahoma City, Okla.

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Lease W½ Sur. 208 Blk. D, Yoakum Co., Texas $5. Lease paid up 10 years and half royalty $15 per acre. Callahan and Jones County royalties. Drilling blocks.

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Abilene, Texas.

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We represent hundreds of California owners of New Mexico State Oil Leases in the trend of development and offer some wonderful buys in Lea, Eddy and Chaves Counties. Barnhart-Powers, 1404 Franklin St., Oakland, Calif.

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Choice leases; also large tracts open for drilling propositions. For reasonable prices and a square deal, write E. Bacon, 17606 Turner, Detroit, Mich.

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C. W. Ludwick
Fort Cobb, Okla.

BROKERS AND INVESTORS: If you want a real buy in an oil lease or perpetual oil royalty located in the big oil play of Lea and Roosevelt Counties, New Mexico, write Monarch Investment Company, Roswell, New Mexico.

Jimm Hogg, Zapata County contract, 40 acres close to Oldsworth field. Will sacrifice for quick sale. Edwin Malm, P. O. Box 523, San Antonio, Texas.

FOR SALE—Oil and Gas Leases in Breckenridge County, Ky. Price right. J. C. Preston, Owensboro, Ky.

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BUY DIRECT FROM OWNERS in Southwest Texas, large Drilling Block, Paid-up leases, or Ranches in fee. On excellent structures. Geological and Engineer's Reports, Abstracts, etc., furnished responsible people free. Write us what you want.

THE PETROLEUM TRUST CO.
Travis Bldg.,
San Antonio, Texas

WILL BUY New Mexico oil leases. Have for sale perpetual mineral deeds, under Major Oil Company leases, Lea County. Write MONARCH INVESTMENT COMPANY, Roswell, New Mexico.

LEASES—PRODUCTION

FOR SALE—Lea County, New Mexico, 40-acre lease, SW¼ NW¼, Sec. 34, Twp. 18s, R. 37e; $200 per acre cash and ⅛ royalty. Also 40-acre lease, SE¼ Sec. 25, Twp. 17s, R. 36e; $100 per acre cash and ⅛ royalty. R. B. Coyle, 2215 Beechwood Blvd., Pittsburgh, Penna.

FOR SALE—Leases, Oil Production, Asphalt, Limestone and Other Mineral Lands. W. P. Harley, Bowling Green, Ky.

ATTENTION BROKERS EVERYWHERE
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FOR SALE
WINKLER COUNTY PERPETUAL ROYALTY
FULLY PARTICIPATING

We sell and deliver as low as one Royalty and Mineral acre up to Two Hundred and Forty acres under all Sections, also 3-4-5-6-7-15-16-17-24-25-38, Block B5, Section 5, Block B-11. Also under Sections 23-25-38, Block 26.

Prices and terms upon application.

Also offer for sale
1,015 Royalty Acres.
Located under all Section 1-12, Block 28, also Sections 5-6-7-17-18-19-20-21-22-23-24-26-29-30-31-32, Block 27.

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All surveyed and platted, located in the NW ¼ Section 5, Block B-5.

Half mile west Boline well in Section 4.

Half mile south Kermit—County Seat—and Flander well.

Will deliver Warranty deed to each lot. Abstractors Certificate Title.

Sell a single lot, size 50 x 140 feet, if desired.

THE PRICE
$39.50 each
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For further information I refer you to any up-to-date

WINKLER COUNTY MAP

If you are interested in buying

Address
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Box 762
San Angelo, Texas

REAL ESTATE MEN AND AGENTS WANTED—Agents, salesmen and real estate men to handle lots and acreage in the townsite of Chula Vista, Hot Springs County, Arkansas, on the U. S. Highway No. 70 near Hot Springs, which is a nationally known resort in the great mineral, oil and gas district of Arkansas. Millions being spent by Arkansas Light & Power Co. for a dam which will make a lake over 20 miles long. Chance for Silver, Lead, Zinc, Oil, Gas and other minerals. Oil test to be made on townsite. Lots $25 to $100 each. Write for maps and information.

Chula Vista Townsite Co.,
625 Central Ave.,
Hot Springs, Arkansas

WINKLER—PECOS COUNTIES
Leases and Royalties.
W. S. PATTERSON
Pecos, Texas.

I AM in the market to buy Oil and Gas Leases and Acreage on good structures. W. W. Ogden, 1203 2nd Ave., Charleston, W. Va.

$3 to $5 per acre for West Texas land with Oil and Mineral right 40 acres up. New Mexico oil leases. Winter garden lots and truck farms on easy terms; agents wanted. A. Poe, 829 Wilson Bldg., Dallas, Texas.

LEA COUNTY, NEW MEXICO
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Pecos, Texas.

LEASES—PRODUCTION

HAVE 25 ACRE lease offsetting gas well shallow drilling. Give half interest for well. Box 412, Muskogee, Okla.

OLD DUNBAR STRUCTURE: Decatur County, West Tennessee, located and mapped by H. D. Easton, one of the best Geologists in Southwest who says it is VERY PROMISING and advised drilling. Several major operators had best geologist to work this same structure and all highly endorse it as good. Standard of La., drilling on this structure: Our own well over 600 feet showing promising. If you want in on EXTRA GOOD PROSPECTIVE field we advise get this one. Choice acreage paid up five years at right prices. Write, wire or better come and see us quick. CHESTER COUNTY OIL CO., Inc., Henderson, Tenn.

ATTENTION, brokers and investors; Write for our list of oil leases and oil royalties in Pontotoc, Seminole and adjoining counties. Bowles and Smith, First National Bank Bldg., Ada, Okla. Phone LD35.

RECENTLY ACQUIRED approximately 7,500 acres on structure, T. 6 S., R. 15 W., Osborne County, Kansas; for sale or available for drilling contract. Golden Exploration Co., 538 First National Bank Bldg., Denver, Colo.

I HAVE VERY PROSPECTIVE WELL blocked Oil & Gas leases in western Michigan and will sell a few interests, based on cost of drilling test wells. Unusual opportunity, no stock for sale. Best of references furnished. Box 256, Mansfield, Ohio.

120 ACRE LEASE on Wilcox structure, Bald Hill District. Want drilled. Box 412, Muskogee, Okla.

FOR SALE—I own 1/64 interest royalty rights on 640 acres in Edwards County, Texas. Survey 64, Block 1, Certificate 1/115. G. W. T. and P. Ry. Co. Will sell all or part acreage for $1.00 per acre. Your opportunity. O. Sundine, 1926 Belle Ave., Davenport, Iowa.

WINKLER, PECOS, WARD, Loving and Reeves Counties. Leases and Royalties. Hemby & Anderson, Box 633, Pecos, Texas.

LEASES AND ROYALTIES

Close in to production, Sedgwick and Harvey Counties, wire or write. Southwest Investment Co., 205 Orpheum Bldg., Wichita, Kans.

TEXAS
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Gulf Coast.

In the play now—Bastrop, Caldwell, Guadalupe, Gonzales, Wilson Counties.

J. S. JONES,
Tel. Bldg. Phone 351.
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ROYALTIES—PRODUCTION

PERPETUAL DEEDED ROYALTIES
Winkler, Loving, Ward, Lea, Pecos Counties. J. R. Haynes, Grantville, Kans.

ROYALTIES, Winkler County, Texas. 40-acre tracts or section spreads. Harry Haynes, Grantville, Kans.

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WESTERN OKLAHOMA royalty ahead of the drill. Inquiries invited. Joe P. Crawford, Petroleum Bldg., Oklahoma City, Okla.

WINKLER COUNTY ROYALTY $5 PER ACRE BASE. Under major company lease. Other royalties under or near production. Write for list. Box 462, San Angelo, Texas.

TEXAS ROYALTY oil lands. Send for circular. Alfred Day, New Tyler Hotel, Ft. Worth, Texas.

ACTIVE WEST TEXAS ROYALTIES. $8 per square mile big company operation. Also close-in and producing. State preference. Maps and bulletins show many fine buys. R. R. Fisk, Box 1214-B, Wichita Falls, Tex.

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IN THE HEART OF TRANS-PECOS

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Additional Classified Wants on Page 137

Burning Oil Demand Exceeds Supply

Colder Weather Causes Rush for Immediate Shipments in Chicago Area. Kerosene Firmer and Gasoline Quiet and Lower

By J. B. Waldo

CHICAGO, Feb. 11.—The colder weather over the week-end brought a further demand for every kind of oil suitable for domestic fuel. There is right now in this market a larger demand than available supply and prices are very firm. Several of the weekly market letters which have been sent out by local sellers during the past week were blank as to prices on distillates, zero gas oils, and free flowing zero fuel oils. Supplies are to be had of most grades but not immediately and at the price which buyers are not able to pay. The consequence is that buyers are seeking immediate shipments at higher prices than they will pay for quantities or for future deliveries and hope that there will be an early warmer spell which will enable them to accumulate stocks. Many of the prices named are nomnial, as no sales result. Buyers for resale were offering 4 cents for distillates and $1.25 for 28-30 fuel for immediate delivery without success.

Kerosene Firm, Gasoline Quiet

Kerosene was firm with a considerable demand and many inquiries.

Gasoline was quiet and the quotations were slightly lower Monday although several of the refiners held for 7 cents for the U. S. Motor gasoline. Sales were made of West Texas gasoline as low as 6¼ cents to jobbers and Oklahoma gasoline was quite freely sold at 6½ cents with some major refiners selling to their regular trade at 6¾ cents and even the half cent where competition was keen. Some sales managers have instructed their salesmen in the territory to get the orders and meet responsible proven competition from any source. The inquiries for heavy fuels and for the straightrun or industrial gas oil were not important and showed no change from the routine demand that has prevailed. The grade of gas oil was firmly held and refiners stated they had a better demand from tank car distributors for fuel oil that had a low but not a zero test.

Quiet Week in Spot Gasoline

All of last week the spot gasoline market was very quiet, the orders being for immediate needs only. The weather has been most unfavorable. One salesman who has traveled Wisconsin for several years by auto for a major refiner was obliged to give up trying to see his customers by auto for the first time since he was in that state, and to abandon his car and take to trains. Another who travels Iowa had the same experience. In the more northerly parts of the territory like conditions prevailed. No early improvement is in sight. When these heavy snow accumulations begin to melt there will follow a period of soft roads. In the immediate vicinity of this city and to the south, the chief trouble has been with icy roads. One oil man who drove from St. Louis last week said he could average only about 20 miles an hour and that on the short drive from Joliet his car turned completely around twice. In this distance he saw four cars overturned. The result may be that in this territory at least the actual consumption of motor fuels may not show much if any increase over last season for the same months, as at that time the weather was very good.

Dealers Not Buying

Dealers have shown little interest in the gasoline situation. They are not buying except in small quantities and are not ordering the full quota on their contracts in many instances. When asked for orders they reply they do not need any gasoline at present. February is at best a poor month for gasoline sales and this season it is worse than usual. Stocks in the country are known to be light and the refinery sales managers believe when the buying does start there will be a lot of orders. There is no use in cutting prices except that by so doing a larger share of the small trade that is going might be secured. Some of the refinery sales offices in this city are not averaging a car a day of spot business and if they are holding to the price of 7 cents for U. S. Motor gasoline these sales are to regular customers who plan to give their business, be it large or small, to their usual source of supply. Those who shop for a price will not pay 7 cents since they are being offered material at less cost.

Some of the major refiners are holding steadily to 7 cents for U. S. Motor gasoline and simply taking what business they can at that price. Others are shading the price by an eighth or a quarter of a cent, they claim, to regular customers only and then to "meet responsible competition." A leading refiner in the Central West was widely reported to have sold U. S. Motor gasoline at 6¼ cents. The report came from jobbers in nearby cities but when the sales department was asked regarding the report an indignant denial was made but it was admitted sales had been made for these reasons at 6¾ cents. So far as the active market went this was the price at the close of last week, although several major refiners were still holding for 7 cents. U. S. Motor gasoline was quoted direct by southwestern refiners from at least two states at 6⅜ to 6½ cents and marketers here were able to buy at 6¼ cents. One leading marketer stated he had been offered U. S. Motor gasoline "by a leading Oklahoma refiner at a price substantially below 6½ cents." He declined to state who that refiner was but said he could sell at 6½ cents and that any jobber would be glad to get the gasoline refined by the concern.

Backing Up at Refineries

This condition is simply the result of the backing up at the refinery due to the lack of consumption. Outlets owned or operated by integrated companies give the refining department no relief unless it be that they can ship to their own stations and practically use them as refinery storage until such time as the demand at retail improves. Judging from the insistence of smaller refiners and occasionally of a large operator for orders or shipping instructions, gasoline is accumulating at some of the plants in spite of the reduced output reported from the industry as a whole. The demand for the higher gravities continues very light as would naturally follow when so little gasoline was selling. Prices for these grades have been easy and recent quotations have been shaded a little, particularly on the 60-62 400 endpoint. The demand for natural gasoline has been for the higher grades, the grades from B to C being seldom called for here. For blending what the jobbers want is the "absorption grade." The situation in Ohio and to a less extent in eastern Michigan continues to be very much unsettled and the attempts of the Standard Oil Co. of Ohio to improve conditions by adjustments of the tank wagon price seem to have given little or no relief unless it be to such refiners as have contracts for the sale of gasoline based on the tank wagon price. But so long as refiners from various centers outside of the state continue to sell their surplus at bargain prices in Ohio just so long will this condition continue. Even the new normal prices have been heavily cut at a number of prominent Ohio cities, the reduction being 2 cents in most cases.

Kerosene Firmer

Kerosene firmed up quite a little last week. Several refiners who had been quoting 5 cents for their 41-43 gravity advanced to 5¼ cents and there was quite a rush from buyers to get under cover. One refiner reported a couple of days when the sales of kerosene amounted to over 50 cars, some orders being for 10 to 20 cars. They were only accepting business for immediate shipment and not for future deliveries. Some orders were from distributors who ordered a car to each of several bulk stations and others from marketers who were taking care of some of their regular jobbing customers. The market is now close to 5¼ cents or better and as stocks are light and deliveries absorb the daily output, a firm market is generally looked for for the coming spring season. The International Harvester Co. which is a large manufacturer of tractors reports a very large increase in the number of tractors sold for the coming spring season and it is generally the opinion many more tractors will be in use this spring than last. They will not be as plentiful as autos but the use of the tractor is steadily growing and with that growth is linked an increase in the kerosene consumption.

Furnace Oil Demand

The active demand last week was in the furnace oil departments. Buying was large and distributors did not hesitate to order when they could secure the material at the going market price. Some country distributors were in the market looking for supplies. In several instances it was noted they would increase the original order materially with no suggestion from the seller. Perhaps the first order would be for two or three cars but before the buyer left that order would be for five or more cars. In few instances have the distributors any excess of material coming to them on their contracts. There is some talk regarding the shortness of the season as compared with gasoline but this is really not true. The furnace oil season in this territory begins early in October and lasts for six months with a peak in January and February. The gasoline season is really good from May to November. The difference is that there is practically no furnace oil demand during the six months when the gasoline consumption is largest while there is some gasoline consumed even in the most unfavorable months of the winter.

Furnace Oil Prices

Prices on furnace oils did not actually soar last week but there was a strong upward tendency. Mild weather gives the distributors some opportunity to catch up on deliveries. Mild weather would lead to a much more comfortable condition in the furnace oil market as it would permit the shipment of refinery orders now in so many cases much delayed. The materials which are most hard to secure right now are the high gravity fuel oils with a zero pour test and a sufficiently low flash to make them desirable for fuel in the larger oil burners. These are usually blended fuels and there is a scarcity of gas oil to be used in making the lighter gravity from the heavier fuels. Some refiners have sold all the gas oil they had to spare and cannot run enough to use any as blending material right now. Others have sold so much of the 28-30 and similar products they have no gas oil to spare for any other demand.

January was an unusual month with its average low temperature and its numerous cold waves. The demand for the furnace oils far exceeded preparations with many sources of supply. The result is a more or less temporary scarcity of the wanted kinds and qualities. Less desirable products which were slow sellers early in the season have been sought and have been all sold so far as the refiner is to be considered. The writer heard one buyer bid $1.15 for a single car of 28-30 fuel oil and the bidding might have gone higher if the refiner had not stated he did not have a single car. It is stated as high as $1.25 has actually been paid for this oil which would be 3 cents a gallon.

Trouble in Delivery

When asked for prices on these oils and on the lighter colored distillates and gas oils there was really no established market last week. There are some distributors and tank car lot sellers who have contracts which call for the delivery of some of the desired oils at much less than the present market price. Their trouble is to secure delivery. When a buyer pays an additional price for prompt shipment he naturally expects to get it and the refinery intends to give the dispatch in shipment which the extra price represents. If other and earlier orders at a lower price are delayed it cannot be helped. However, the buyers who placed these earlier orders claim they are entitled to shipments according to contract but perhaps they did not order out their material as per contract before the heavy demand set in. In fact, earlier in the season it was the refiner who complained of the difficulty of securing shipping instructions on these early orders. The situation is not uncommon in any industry when a large and rather sudden demand is created by unexpected conditions, for some particular material. So far distributors have succeeded in caring for their customers and while it has taken a lot of hustling to do it the trade and the public are both learning something regarding the necessity or at least the desirability of having some stocks of oil in store. It is a weather problem to a great extent. From now on there will always be a lot of furnace oil used and some years the average will be exceeded, some seasons it will not be reached but the increasing popularity of the domestic oil burner insures a very considerable consumption during even the most mild winters.

The largest demand for the zero gas oils is for domestic burner consumption and the market for these is strong with a tendency to further advances for immediate deliveries. The trade figures there is more cold weather to follow. Refiner after refiner has replied to inquiries that the plant has no gas oil and that any daily output is sold ahead. Occasionally some one will have a little. A supply of small proportions is available in Texas but some of this is not first-grade furnace oil because of the odor. The demand for straightrun or U. G. I. oil is now nearly at its height as the gas companies are using oil for the largest output of their product and this oil is also hard to buy and very strong in price at an advance in this market of a quarter of a cent, more than that if the increase is reckoned from the low point of 2⅜ cents, Group 3.

Industrial Fuels

The heavy industrial fuels are moving steadily and in large quantities but chiefly right now on contracts. The consumption is at the peak for the season but owing to available stocks and previous purchases by distributors the market is just about holding its own. The zero oils which are also low in sulphur are firm and the oils with an ordinary cold test are a drug on the market, at least at the price asked by refiners for this

(Continued on Page 137)

Eastern Tank Car Market in Decline

Tank Wagon Situation Still Soft. Unfavorable Weather Hampers Gasoline Consumption. Export Outlook Studied

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Feb. 11.—A general decline in the tank car gasoline market has carried prices down another quarter cent to 10 cents. The reduction has been made retroactive to January 31 by some sellers, with others making the cut retroactive to February 1. The tank wagon situation is still soft, and considerable irregularity exists throughout the territory. Paraffin wax prices are easy, and slightly off, with the remainder of the market unchanged in price.

Unfavorable weather conditions have further hampered gasoline consumption, although a change for the better during the past two days has given hope of better things. A little week-end buying is reported by jobbers, in anticipation of an active demand over tomorrow's holiday here.

Interest is centering largely in the export outlook this week, with indications leading refining interests have virtually succeeded in securing acceptance of their recently revised price schedules on gasoline and kerosene. There are more inquiries for bulk stocks for shipment abroad and it is predicted in export trade circles foreign buyers will shortly re-enter the market in a large way, and that the schedule will be maintained. Foreign buyers, it is pointed out, have permitted their stocks to become materially depleted during the past fortnight, during which period they have remained out of the American market in an effort to force lower prices.

Tank Car Gasoline

Quiet trading has prevailed this week. Notwithstanding the quarter cent cut to 10 cents, the market is far from steady, and it is reliably reported some cutting is still being indulged in. Current deliveries on contracts are netting marketers only about 9 cents refinery. With the tank wagon market at 15 cents and the bulk of the marginal contracts giving the buyer a 4½-cent differential, and freight charges averaging 1½ to 2 cents sellers cannot hope to average more than 9 cents. As a result of this situation, distributors in most instances are ordering forward shipments on their marginal contracts, and spot trading has fallen away materially.

Continued unfavorable weather conditions have cut further into consumption in the East Coast area, and replacement buying on the part of distributors is consequently lagging. Jobbers lack confidence in the current position of the market, and are keeping their storage holdings of motor fuel at a minimum. Snow has interfered materially with automobile traffic in many sections, particularly in New England, and no relief is looked for.

Price cutting activities of some distributors are giving concern to leading interests, and the situation is being carefully watched, the large factors meeting competition wherever it develops in order to keep their business in line. This situation, it is expected, will take a turn for the better when the new code of ethics goes into effect. Pending this development, leading marketers are taking all necessary steps to keep their distributive outlets unimpaired.

Tank Wagon Gasoline

The situation is still showing a little irregularity, but fundamental market conditions are much improved. While price cutting still presents somewhat of a problem, the leading interests have shown a disposition to take prompt steps to protect their interests, and with this feeling prevalent, small operators are less inclined to endeavor to break into new business through the medium of price cutting. There is evidently still considerable cheap gasoline around, but the trade as a whole appears to realize the futility of endeavoring to force a stimulation of gallonage through the medium of shading. With all interests showing a willingness to meet whatever competition necessary, there is obviously little to be gained from price cutting campaigns, save a curtailment in operating revenue, and the sellers, as a group, are inevitably the only losers.

The market in New York City is held at 17 cents, tank wagon basis, with the retail quotation 2 cents over this level. Up-state, gasoline is held at 15 cents, tank wagon basis, with the quotation in New England ranging 15 to 16 cents.

Buying of premium grades of motor fuel continues a market factor, the cold weather making for continued heavy consumption of this grade. Retail prices for high test, colored motor fuels range from 19 to 23 cents. Some of the independent marketers are selling their own brands of high-test motor fuel at the same level as the ordinary tank wagon quality by the leading factors.

Kerosene

The old proverb anent the "ill wind" is illustrated by the position of the kerosene market. While cold and stormy weather is cutting into gasoline sales, it is having the opposite effect upon kerosene, and gallonage has shown further expansion. Refiners in the East Coast area are getting a heavy demand for prompt shipment kerosene, and are holding the market firm at 8½ cents for water white in tank car lots. Export business is also holding up fairly well.

Tank wagon kerosene markets continue strong and active, with a good demand reported throughout the entire territory.

Fuel Oil

Bunker "C" holds unchanged at $1.05 per barrel, bulk, f.o.b. terminals, with a good movement reported. Barged alongside within harbor limits, the market is firm at $1.10. The large steamship lines are taking supplies in a large way against standing contracts, with a fair movement reported in the spot market. Industrial demand is still a factor, with large quantities of heavy oil also going into consumption on furnace oil contracts.

Gas Oil

East Coast refiners report a steady demand for 32-36 gas oil, the market remaining in steady position at 5¼ cents, on the part of the leading interest, with other sellers continuing to offer at 5 cents. Prices for 28 plus gas oil range 4¾ to 5 cents, with off grades available down to 4½ cents. Stocks at refineries are fairly large.

Lubs

Buyers are still holding off the market for cylinder stocks, and while refiners have made no further price concessions, the market tone is easy and further declines are anticipated by operators here. The domestic trade has also slackened its buying operations.

Red and pale oils continue rather sluggish on the spot position, but no price changes have developed. Inquiry is confined to small lots for prompt shipment.

Refiners are offering all grades of lub oil in better volume this week, and are seeking future orders, but meeting with but little success.

Paraffin Wax

Although the market for crude scale has eased off further, a better feeling is in evidence on fully refined stocks. Selling pressure had eased off considerably, and refiners were evidently more optimistic for the near future. Buyers, however, were still operating in hand-to-mouth volume, and there was little disposition being shown to stock ahead. Consumers, in most instances, are still fairly well stocked with wax bought at higher price levels in December and January. In addition, buyers in many cases are still getting deliveries from the refineries against orders booked during the past two months. It seems to be generally felt by consumers that bottom has not yet been touched on the current price move, and they are reluctant to extend any buying support.

Export operators have not been in the market for tonnage in sizeable volume this week. There was some inquiry for export wax but little actual business was closed, and operators believe the inquiries were largely "feelers."

Crude scale continues to exhibit marked weakness. Although refineries are holding white crude scale, 122-124 a.m.p. at 4 cents a pound, business has been closed at 3¾ cents, and buyers' views are best illustrated by the fact that current bids on this melting point are ranging from 3½ to 3⅝ cents.

Refiners are looking for future business at today's going prices, but are finding few buyers willing to contract. It is reported refiners in the East Coast area are curtailing their production somewhat in an effort to strengthen the statistical position.

Painters' Naphtha

Standard Oil Co. of New York has reduced varnish makers' and painters' naphtha 2 cents a gallon to 18 cents, tank wagon basis, this reduction applying to metropolitan New York. The market for this naphtha was reduced 1 cent to 19 cents in New England and Albany, with a 1 cent reduction to 18 cents made in the schedule at Buffalo. The tank car market for petroleum spirits is quoted at 13 cents f.o.b. New York refineries.

Petrolatum

More inquiry for the white grades was reported from the domestic trade and the market has continued steady. Snow white is holding at 8½ cents a pound, with lily white held at 7½ cents. Pharmaceutical grades are still in demand, and refiners anticipate a continued good market for this material well into the spring. The widespread prevalence of influenza is credited with precipitating the extraordinary demand for petrolatum at this season.

Routine demand for the lower grades of petrolatum for shipment abroad is reported. Refiners continue to quote dark green at 2 cents per pound, with buyers bidding 1¾ to 1.90 cents per pound on large lot business. Amber grades are holding at listed quotations, and are coming in for fairly active buying.

Diesel Oil

The market holds at $2 per barrels, bulk, Bayonne terminals, with a continued active movement recorded. The bulk of current business is confined to shipments against standing contracts, although a little spot inquiry develops from day to day. The large marine interests are drawing stocks in a large way. Reports in shipping circles indicate the probability of considerable new construction of passenger tonnage during the next year or so, much of which will be powered by Diesel-electric drive. Industrial demand for Diesel oil is of routine proportions, most of this class of buying being of spot oil.

Export Markets

More inquiry for bulk gasoline has made its appearance this week, and the trade expects that the price levels reported established by action of the newly organized export corporation will be maintained. Thus far, confirmed sales of cargo lots at the association's price schedule have been made by leading companies to foreign operating subsidiaries. Atlantic Refining put through the first sale of this character a fortnight ago, and Sinclair is reported to have closed a cargo out of the Gulf this week for the account of its French marketing subsidiary.

A prominent French independent marketer has been inquiring this week for a cargo of navy and 64-66 375 endpoint, out of the Gulf. This buyer was bidding 8¼ cents on navy and 9¾ cents on 64-66, both prices being a quarter cent under the established level. At last reports, the purchase had not been made, but sellers were holding firm and a significant feature was, from the standpoint of export operators, that refiners were not even making counter offers against the bid of the French buyer.

The current schedule on bulk gasoline prices is as follows:

	Cts. gallon N. Atlantic	Gulf
Navy	9½	8½
60-62 390 endpoint	10¾	9¾
64-66 375 endpoint	11	10
66-68, aviation grade	14	13

Business in cased gasoline is holding up fairly well, with refiners quoting the market unchanged at 26.40 cents per gallon, at Bayonne.

Bulk kerosene prices in the export markets are strong, as follows:

	Cts. gallon N. Atlantic	Gulf
Prime white	7⅝	6⅝
Water white	8⅝	7⅝

There has been a steady movement in cased kerosene throughout the week, with the market firm at 17.65 cents for standard white and 18.90 cents for water white, f.o.b. North Atlantic refinery terminals.

Fuel oil trading at the Gulf has been along routine lines again this week, with the market holding at 68 cents for Bunker "C" in cargo lots.

Export demand for lub oils has again lagged behind this week, and the market is rather easy, although no further price recessions have developed. Paraffin wax is also moving in but limited quantities for shipment abroad, and quiet is reported likewise on the other minor products.

Petroleum Exports

The following table shows principal exports of petroleum and refined products from New York during the past three weeks (all figures in gallons unless otherwise noted):

	Week ended Feb. 2	Jan. 26	Jan. 19
Gasoline	706,000	850,000	770,000
Naphtha	2,071,000	2,629,000	1,547,000
Kerosene	158,000	440,000	1,285,000
Fuel oil	23,000	4,000	25,000
Lubricating oil	4,155,000	2,985,000	2,645,500
Petroleum, refd.	3,460,000	1,330,000	1,330,000
	Pounds		
Petrolatum	91,000	53,000	.....
Paraffin wax	1,847,000	1,623,000	3,789,000
Refined	40,000	.....	.....
Scale	497,000	1,444,000	311,000
Lub. grease	1,648,000	2,629,000	1,003,000

California Oil Receipts

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended February 2 totaled 400,000 bbls., a daily average of 57,143 bbls., against 457,000 bbls., a daily average of 65,286 bbls. for the week ended January 26. Details follow:

(Barrels of 42 gallons)

At Atlantic Coast ports—	Bbls.
Baltimore	104,000
New York	236,000
Philadelphia	60,000
Total	400,000
Daily average	57,143

Distribution of total California oil receipts is as follows:

	Bbls.
Crude	332,000
Gasoline	68,000

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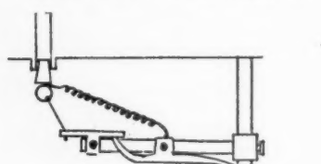
Practical Suggestions in Refining

By W. T. Ziegenhain

REMOVING CORK FROM SAYBOLT VISCOSIMETER

A simple device for removing the cork from the Saybolt viscosimeter has been worked out and is in use at Iowa State College, according to the Baker Analyst. Because of the numerous times the viscosimeter is used in refinery laboratories, the device would find a wide application there.

It eliminates the chance of burning the operator's fingers, being cut with glass should the receiver be knocked and broken and the operation of the device does not interfere with the performance of the test. A sketch of the apparatus is shown below and consists simply of a



compound lever, a weak spring or an elastic and a stand to which the apparatus may be attached.

To operate the little ball at the end of the lever arm is tapped at the same time the stop watch is pressed and the cork is pulled from its position first by the string from the lever and as soon as it is freed the cork is pulled out of the way by the spring or elastic band.

NEW PETROLEUM FILMS

Several additions have been made to the list of films produced by the United States Bureau of Mines featuring safety work. These films are loaned free of charge to interested organizations. The bureau has also produced several films showing the operation and care of the internal combustion engine, the more recent of these being given the title, "The Power Within, or the Construction Operation and Care of the Internal Combustion Engine." Another recent film, "Carbon Monoxide the Unseen Danger," will be of interest. Operators have found these films useful in educational work in familiarizing their men with the general problems and have proved popular in training sales representatives. These films may be secured from the United States Bureau of Mines at Pittsburgh, Pa. The list of titles of interest in addition to those mentioned include: "The Story of Gasoline," "The Story of Lubricating Oil," "The Story of Lubrication," "The Story of a Storage Battery," "The Story of the Heat Treatment of Steel," "The Story of a Spark Plug."

EMPLOYMENT INCREASES

Employment in refining continued to show an improvement during December, according to the latest United States Department of Labor report. While the number of men employed on an average over the year was considerably under that for the year previous, and the pay roll total was 3.6 per cent higher. Comparing the status of employment in all industries the department reports an increase of 3.2 per cent in the number of employes and 4.8 per cent in the pay roll total for December, 1928, over 1927.

COLORED CHARTS ADOPTED TO SHOW EFFICIENCY OF DAILY OPERATIONS

Several Mid-Continent refiners have found they can more easily and quickly review the efficiency of certain operations through the use of colored charts and these are now in use in filtering and centrifuging, but the scheme might be applied to any other operations, as well. Offhand, the idea might be looked upon as another one of the ambitious but impracticable ways of keeping tab on the operators and devised to give the office help more to do. But after talking to the operators themselves, they say they much prefer this scheme to the ordinary reports, and it is favored where the job is done in shifts, because the chart gives a true and forceful picture of the status of the work and in a glance the new man can see what has been done the 16 hours prior to his coming on the job.

By referring below to the form used by the Barnsdall Refineries, Inc., an idea may be gained of how the information is shown in the report. The form covers a 24-hour period, starting with 7 a.m. each day. The particular form taken as an example here covers the filter house operations. The list of filters are shown in numerical order on the left margin and the service each is in is written in the report by the operator in the next column.

In the space to the right of each, different colored pencils tell the story of the operation of each filter for the day. The different colors could not be shown here, so instead different arrangements of the black and white figures were used. In actual practice, blue is taken to represent the time consumed in charging the filter with earth, gray the time it takes for the filter to soak, yellow the time it is producing an oil up to type in color, etc. The full list of nine operations and colors may be seen along the bottom margin of the form.

The operator's eye soon becomes trained to note at a glance whether there is too much red on his shift or some other color that will have to be explained. The superintendent or foreman can review the operation at a glance while just walking past the desk where the report is being kept. Ordinarily, it is not necessary to bring it up to date oftener than once every hour.

When the new shift comes on they can determine the exact status of every filter in a minimum of time and there is no chance of the first operator forgetting to tell the relief what condition filter number so and so is in, nor is there a chance for the relief to pass the blame to the first man for not being told. The shift can be made without any conversation, and such a system certainly has its merits over one depending upon verbal advice.

The value of this type of report simply reverts back to the fact that a man can read a picture and get a more impressive idea of the facts than when spending the same time in reviewing tabulated data.

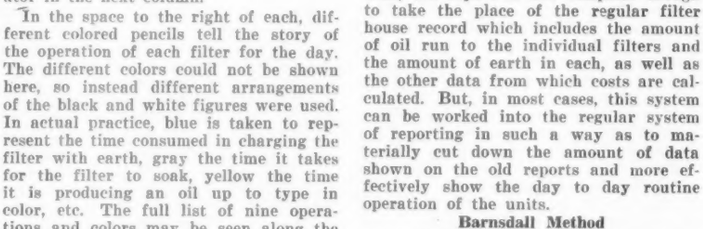
The problem before adopting the charts resolves itself into one of shaping the data into a picture without making it more complicated than the data itself.

For this reason, it may not be practicable to adopt this color chart in certain plants or in certain departments. The scheme is most applicable where there are a number of units involved, such as a battery of shell stills, filters, centrifuges, boilers, etc. It is also of use principally where the units operate at full capacity. Where there is excess capacity there might be nothing gained from pushing the operation and then be forced to allow the equipment to lie idle because there is nothing to process. Likewise, the report is not complete enough to take the place of the regular filter house record which includes the amount of oil run to the individual filters and the amount of earth in each, as well as the other data from which costs are calculated. But, in most cases, this system can be worked into the regular system of reporting in such a way as to materially cut down the amount of data shown on the old reports and more effectively show the day to day routine operation of the units.

Barnsdall Method

At the Barnsdall refinery at Barnsdall, Okla., the operators keep the chart up to date hourly and when a red space is shown which means "Waiting" an explanatory note is required. The same is true if the operation is unusual in any other respect. A list of symbols has been worked out which explains the cause of these delays and a recapitulation and analysis of these are made at the end of each month. If too much delay is caused by inadequate conveyor capacity, for instance, a study of this situation is made and that weakness rectified. If too much

(Continued on Page 137)

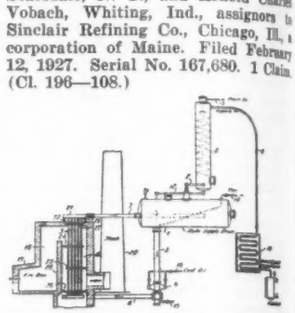

BARNSDALL REFINERIES INC
CONDITION OF FILTERS
FOR DAY ENDING 7 A.M. JANUARY 28 19 29
NOTES 4½ hours lost time
/4 delay 3½ Hours Oil
1 Hour

Form used by Barnsdall Refineries, Inc., at their Barnsdall, Okla., plant to trace the efficiency of the filter house operations daily. Colors could not be used in the chart here so the different black and white combinations have been substituted for the different colors to give an idea how the colors are put in.

Recent Patents

CORES USED IN TUBES

1,676,204. Oil Still. Edward W. Isom, Scarsdale, N. Y., and Arnold Charles Vobach, Whiting, Ind., assignors to Sinclair Refining Co., Chicago, Ill., a corporation of Maine. Filed February 12, 1927. Serial No. 167,680. 1 Claim. (Cl. 196—108.)



In tubular oil cracking pressure stills, a bulk supply drum, a battery of heating tubes connected in multiple, and means for circulating heating gases thereover, connections between the bulk supply drum and the battery of heating tubes including a forcing means whereby oil may be circulated from and to the bulk supply drum through the battery of heating tubes in a direction generally countercurrent to the flow of heating gases thereover, the upper ends of the battery of heating tubes being below the usual liquid level in the bulk supply drum, said heating tubes having stationary solid cores formed of twisted rods arranged in and extending centrally therethrough leaving a continuous annular oil passage through said heating tubes.

SODIUM BREAKS EMULSION

1,700,627. Process for Recovering Oils from Emulsions. Samuel Warren Cole, Tulsa, Okla. Filed December 17, 1924. Serial No. 756,565. 1 Claim. (Cl. 196—4.)

A process for breaking up crude petroleum emulsions comprising thoroughly mixing metallic sodium and calcium carbide with the emulsion to cause a chemical reaction between the water of the emulsion and the metallic sodium and calcium carbide, whereby the emulsion is broken down and the water and oil separated into strata.

USE SOLVENT OF PREFERENTIAL ACTION

1,685,058. Process of Treating Slack Wax. Benjamin L. Souther, Pittsburgh, and William A. Gruse, Wilkinsburg, Pa., assignors to Gulf Refining Co., Pittsburgh, Pa., a corporation of Texas. Filed August 30, 1926. Serial No. 132,652. 12 Claims. (Cl. 196—20.)

1. In the treatment of slack wax, the process which comprises comminuting solid slack wax to a fluent consistency, adding a solvent liquid having preferential solvent action on the oil and mechanically separating the solid components from the liquid components.

DOCTOR TREATMENT MODIFIED

1,684,159. Process of Refining Oils. Sibren Tijmstra, Madison County, Illinois, assignor to Roxana Petroleum Corp., a corporation of Virginia. Filed December 6, 1926. Serial No. 153,044. 3 Claims. (Cl. 196—33.)

1. The process of treating oils which consists in adding thereto a doctor solution and then adding to said treated oil a water solution of a polysulphide capable of releasing free sulphur for precipitating the lead compounds from the oil.

EASTERN TANK CAR MARKET IN DECLINE

(Continued from Page 135)

Imports

Imports of crude and refined oils at the principal United States ports for the week ended February 2 totaled 1,603,000 bbls., a daily average of 229,000 bbls., compared with 2,028,000 bbls., a daily average of 289,714 bbls. for the week ended January 26. Details follow:

(Barrels of 42 gallons)

	Bbls.
At Atlantic Coast ports—	
Boston	67,000
New York	894,000
Philadelphia	153,000
Others	65,000
Total	1,179,000
Daily average	168,429
At Gulf Coast ports—	
New Orleans and Baton Rouge	362,000
Port Arthur and Sabine district	62,000
Total	424,000
Daily average	60,571
At all United States ports—	
Total	1,603,000
Daily average	229,000

Tanker Rates

The charter market for coastwise crude and intercoastal clean oil tonnage continued firm with a fixture reported in the latter trade at 68 cents for March loading. This is an advance of 3 cents. Demand for tonnage in February position to load at Venezuela or the United States Gulf, for North of Hatteras, continued good with charterers indicating a willingness to pay 19 cents. Owners of vessels in this position have been holding firm to secure 20 cents or better. In several cases vessel owners have indicated a willingness to trade only on consecutive trip charters with a maximum and minimum rate as the basis.

A PRACTICAL SUGGESTION

(Continued from Page 130)

given good results under all conditions in handling gases including cracking plants where large amounts of sulphur compounds are present consists essentially in two separate towers the dimensions for a 10,000-gallon plant being 24 inches by 15 feet in height. The first tower is for water washing the gas and the second for treating with caustic soda. The towers are packed with crushed rock to within a few inches of the top, the water and caustic solution are sprayed in at the top of the towers with a level at the bottom of approximately 1 foot of liquid.

The water after washing the gas is run off but the caustic is recirculated until spent. The gas enters at the bottom of the water tower going out through the top thence into the caustic tower from there into the absorber. Liquid level gauges are also provided on each scrubber.

ADOPT COLORED CHARTS TO SHOW EFFICIENCY

(Continued from Page 136)

time is taken to do a certain operation, it will easily show up.

An example of the value of this was cited by V. R. Oakley, superintendent, and E. B. Gray, assistant superintendent. They noted it took 15 minutes longer to charge one set of filters than it did to charge another and the difference was so consistent day after day it was apparent that some fundamental difference in the equipment existed. When the cause was investigated it was easily seen that the slower operation was caused by a slightly smaller feed pipe running from the earth bins to the filters, so a larger one was installed. It is doubtful if anyone would have taken the time to analyze the operation that closely if only the figures were reported, but the difference was very apparent when the charts were analyzed.

The code used by the operators in reporting the cause for the delays is shown below. As an example, if there is a delay in washing one of the filters it will show up as a long purple rectangle. To explain this, the operator might show a W1 on the report, which means that the pumps or lines were inadequate to handle all of the work to be done. If a W2 is shown on the report, the delay was caused by a shortage of naphtha, etc. If there is a delay in dumping, the report may show a D1, which means the conveyor belts or elevators are inadequate, or there may be some other cause reported, any one of which may be classified under one of the 20 headings.

Following is the list of symbols used at the Barnsdall plant:

Delays in Washing	
Pumps or lines inadequate	W1
Out of naphtha	W2
Mechanical troubles	W3
Delays in Dumping	
Conveyor belts or elevators inadequate	D1
Conveyor belts or elevators—mechanical trouble	D1M
Carriers or viaduct inadequate	D2
Carriers or viaduct—mechanical trouble	D2M
Mechanical troubles	D3
Electrical troubles	D4
No bin room for unburned clay	D5
Delays in Charging	
Conveyor belts or elevators inadequate	C1
Conveyor belts or elevators—mechanical trouble	C1M
Carriers or viaduct inadequate	C2
Carriers or viaduct—mechanical trouble	C2M
Mechanical troubles	C3
Electrical troubles	C4
No burned clay ready	C5
Delays Not Included in the Above	
Out of stock	S1
Miscellaneous	S2

At the end of the month a recapitulation is made of each item, and the percentage of time consumed in each operation is computed allowing a direct comparison to be made between any two months or over a period of time. The results from month to month may be computed on a filter-day basis. It was a surprise to the operators to see that during one month more than 1,000 filter hours were lost. This meant the equivalent of two filters being idle three of the four weeks in the month and bringing the lost time to their attention in that way brought a fuller realization and a greater appreciation of the value of the new report.

BURNING OIL DEMAND EXCEEDS THE SUPPLY

(Continued from Page 134)

grade of product. The first of the month buying by those concerns which supply themselves after this manner was not particularly heavy. Some concerns are drawing on their stocks and are out of the market until they have reduced their storage. In another 30 days the heavy buying for heating will be over and the industrial demand will be the main factor.

There is a good deal of talking and some action may result regarding the putting in of cracking plants and thus reducing the supply of available fuel oil. Two representatives of refiners were seen in this market within the past two weeks who had determined to put in cracking stills. They had not when seen actually placed the order for the stills but they had made up their minds it was the thing to do. These two refiners may not carry out their intentions but the adding of cracking stills to plants now without them for the purpose of using their fuel oil as a material for gasoline should result in a decrease in the quantity of fuel oil and a change in its characteristics. There is another possibility and that is the change of the motive power of the heavier autos, buses and trucks from gasoline to Diesel engines. The Diesel engine has some advantages over the gasoline engine. It has the field in naval uses and may have a large part of the field in aviation and transportation. It is a future condition but it may come and result in a great decrease in the demand for lighter products and as great an increase for the gas and fuel oils which will fuel these engines.

Lubricants

Lubricating oils are not moving actively just now but the strength in bright stocks and steam refined stocks is maintained. So long as the present method of refining bright stocks is followed the quantity of steam refined stocks will be small. Some refiners of lubricating oils seldom, if ever, have any. Neutral oils are unchanged though not strong and are the present exception as practically all other refined lubs are firm to strong. Motor oils are necessarily quiet with so little driving. Industrial specialties are in average demand.

Service Station Situation

The service station price at Peoria, Ill., which has been a troublesome point for years has been reduced to 14 cents and the tank wagon price has been left at 14.2 cents. There are other points in the territory where there is some cutting of prices although the larger distributors have not yet disturbed the posted prices. There are numerous points where there is a margin between the delivered cost of gasoline and the tank wagon price of between 5 and 6 cents, some where the margin is larger. Such a condition is favorable to price cutting and were the consumption more active, more cutting of prices might be expected. Higher refinery prices would help maintain the tank wagon scale which is surely low enough right now. But there is a great deal of unrest and tank wagon reductions were made in several of the neighboring territories during last week, notably in Ohio and Kentucky territories. Some believe the whole price structure is working towards lower levels owing to overproduction of crude and refined products as evidenced by the large stocks of oil, crude and refined reported as of January 1. Some prices are also too low for any possible present profit. For example the owner of an 18-apartment building is paying 3½ cents for fuel oil delivered in his tank. The invoice was shown to prove the fact. The distributor is reported in the trade to have paid 47½ cents a barrel for the oil and the freight is 90 cents a barrel. The delivered cost of this oil is $1.37½ a barrel and the return is $1.47 a barrel leaving a margin of .095 cents to pay all the costs of delivering each barrel of oil. Experienced distributors claim the very lowest distribution cost possible is 21 cents a barrel and it is often more than a cent a gallon.

TEXAS P. L. STATEMENT

The Texas Pipe Line Co. of Oklahoma, which serves only Oklahoma fields, reports for January, runs from wells 1,117,612 bbls.; shipments 1,119,561 bbls. and stocks 8,189,858 bbls.

MARLAND OIL CO. TO OPEN OFFICES IN FORT WORTH

FORT WORTH, Tex., Feb. 9.—Marland Production Co. will reopen its Texas and New Mexico headquarters in Fort Worth, February 15 with George H. McIntyre in charge. The entire eighteenth floor of the W. T. Waggoner Building will be occupied by the production, land, scouting, geological and legal departments.

Marland company offices in Fort Worth were closed several months ago with the exception of legal representation which was maintained here. The land department was the last department to be moved to Ponca City in the reorganization and it transferred to Ponca City only a few months ago.

E. J. Nicklos, vice president, was in Fort Worth the fore part of the week directing the plans for re-establishment of headquarters here. McIntyre has been associated with the Marland company production department for the past several years.

District offices are to be established in West Texas in the near future. Their location has not been announced.

HASELTINE RECOVERING

R. S. Haseltine, general manager of the Guiberson Corp., of Dallas, Tex., is recuperating in Los Angeles, Calif., from the effects of an illness which developed from an attack of influenza. He is expected to be entirely recovered and back in the harness again within the next three months.

COSDEN P. L. STATEMENT

In January, in the Oklahoma fields, the Cosden Pipe Line Co., subsidiary of the Mid-Continent Petroleum Corp., reports runs of 930,392 bbls.; shipments 867,996 bbls. and stocks 3,687,321 bbls.

GERMANY DOUBLES MOTORS

Germany has almost doubled its number of motor-driven vehicles compared with only two years ago. The fuel question has become of great importance and interest centers on synthetic benzine.

CLASSIFIED WANTS

(Continued from Page 133)

GEOLOGISTS

OIL LOCATED before drilling. Geophysical method. Magvibrometer Instrument; take pay in oil. No oil, no pay. Except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Texas.

LOCATING AND DEFINING OIL AND GAS structure which will produce. WANTED, capital interested in wildcat territory. Will lease and locate. D. H. Reavis, Columbia, Tenn.

GEOPHYSICAL SURVEYS made with Vertical Intensity Magnetometer. Also combined geological and geophysical reports, if desired. MID-CONTINENT EXPLORATION COMPANY, INC., 727 Giddens-Lane Bldg., Shreveport, La.

INTERPRETATION of Magnetometer results, detailed structure maps made from vertical magnetometer data. Field parties organized and supervised.
M. KEISER, E.E. M.A.I.E.E.
Consulting Geophysicist
Box 171, Ponca City, Okla.

ADDRESSES WANTED

Will D. A. KNIGHT formerly of Denver Mfg. Concern or past business associates, please communicate with C. W. Hogan; important news. Sasakwa, Okla.

Anyone knowing present address of W. E. CLARK formerly of Dallas, San Antonio and Beeville, Texas, please communicate with R. S. Bond, P. O. Box 1595, Dallas, Texas. Have important news for W. E. CLARK.

WANTED

WANTED: Driller to drill for oil on land in South Texas on royalty basis. Address V. C. Whipple, Elwood, Ind.

WANTED—Oil operator to develop proven field on shares. Dome formation, oil shallow, near railroad, Alberta, Canada. Box C-762, The Oil and Gas Journal, Tulsa, Okla.

RESPONSIBLE DRILLING CONTRACTOR wishes straight contracts in Michigan Field. Am completely equipped with the best of tools and will make an interesting price to reliable companies. Have the experience, ability and finances to complete your wells in record time. Address Box C-772, The Oil and Gas Journal, Tulsa, Okla.

PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form.
Evidence of Conception
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
240 Ouray Bldg., Washington, D. C.

PATENTS—Oil well cases a specialty. Reliable services by an experienced practitioner, devoting personal attention to each case. References to oil well clients in Tulsa. B. P. Fishburne, Patent Lawyer, 550 McGill Bldg., Washington, D. C.

MANUFACTURING MACHINISTS

MACHINE WORK—CASTINGS
Machined to your drawings. Gears. Machinery designed and built.
Modern Facilities—Prompt Service.
Reasonable prices. Send for our booklet.
GENERAL ENGINEERING AND MFG. CO., ST. LOUIS, Mo.

Brief Items for Petroleum Refiners

California Dealers Stabilize Standard Grade Gasoline Price

California independent resellers have succeeded at least temporarily in stabilizing the price of all standard grades of gasoline and a concerted attempt is now under way to effect a permanent readjustment and prevent a repetition of the ruinous price slashing which has characterized conditions on the Pacific Coast during the past several weeks.

San Francisco Bay region retailers started the movement to reestablish original quotations and Los Angeles dealers followed on February 9 by removing cutrate signs and substituting standardized prices at 18½ cents per gallon for regular gasoline and 20½ cents for Ethyl and other antiknock fuels. These quotations included the regular 3-cent tax. Tank wagon prices all during the recent price war remained unchanged at 16½ cents and 18½ cents per gallon, including tax for regular gasoline and antiknock fuels. It is quite obvious that many service station operators took serious losses when selling ordinary gasoline at 15 cents and under per gallon and the Ethyl grade at 18 cents or less, as these quotations were below existing tank wagon prices. Distributors of Ethyl gasoline increased the tank wagon price to resellers 1 cent per gallon on February 10, bringing present quotations on this fuel to 19½ cents per gallon, including the state tax.

The marketing situation on the Pacific Coast is not definitely settled by any

(Continued on Page 152)

COMPLETING LARGE PLANT OF GENERAL AT TORRANCE

The new refinery of the General Petroleum Corp., located at Torrance, Calif., will be completed this month and ready to operate by March 1. The plant, which will be complete in its operations except for cracking, will have a capacity of 30,000 bbls. daily.

The new refinery has been under construction for several months. It is the largest new refinery project undertaken during the past year not only in California but the entire United States.

The Torrance plant when completed will give the General corporation four plants in California. The corporation has a 55,000-bbl. plant at Vernon, Calif., 10,000-bbl. plant at Lebec and 3,000-bbl. plant at Olinda. The latter two are topping plants. The General corporation is a subsidiary of the Standard Oil Co. of New York.

CENTRAL TEXAS DIRECTORS

E. L. Smith, president of the E. L. Smith Oil Co., Mexia, Tex., has been elected a director of the Central Texas Refining Co., of Corsicana, Tex. The latter company late in January acquired the properties of the Kent Middleton Oil Co. and changes were made in the executive staff and board of directors.

R. L. Wheelock of the firm of Wheelock & Collins, Corsicana, and W. C. Stroube, of Stroube & Stroube, Corsicana, also have been named on the board of directors.

GASOLINE CONTRACT PLACED

DETROIT, Mich., Feb. 9.—The Sinclair Refining Co. was the successful bidder for the contract to supply 1,000,000 gallons of gasoline to the city of Detroit. The shipments are to be made over 60 days, beginning February 15. The price paid was 9.8 cents delivered, which would equal 6.1, Group 3.

GRAYBURG-INDIANA MERGER CONSUMMATED

SAN ANTONIO, Tex., Feb. 11.—Official announcement of the merger of the Grayburg Oil Co. of San Antonio with the Indiana Oil & Gas Corp. of New York was made here today by Silas M. Newton, president of the Indiana Oil & Gas Co. The merged companies have combined assets of $20,000,000. Indiana Oil & Gas Co. will control 83⅓ per cent of stock of the Grayburg company. Dr. F. L. Thomson, president of the Grayburg company, becomes interested in Indiana Oil & Gas. Some 4,000 bbls. daily production of oil owned by Mr. Newton in Pecos and Cook Counties will go to the Grayburg refinery at San Antonio where a new Dubbs cracking unit has just been completed making the daily runs to Grayburg 6,000 bbls.

John W. Choate, of Oklahoma City, has moved to San Antonio and at a meeting of Grayburg stockholders will be elected vice president of the Grayburg company. Mr. Newton will be president and Doctor Thomson, chairman of the board. Arthur J. Devlin of Tulsa becomes a member of the executive committee of the Grayburg company and will divide his time between Tulsa and San Antonio. Indiana Oil & Gas Co. has 75,000 acres under lease and development in southern Indiana with a 10-year contract to supply the Central Public Service Corp. of Chicago.

PHILLIPS BUYS MORE STATIONS OF WILHOIT

The Phillips Petroleum has purchased 76 distributing units, consisting of 46 service stations and 30 bulk stations located in 31 cities and towns in southwestern Missouri and southeastern Kansas, from the E. M. Wilhoit Oil Co. of Springfield, Mo.

The purchase comprises all the remaining Wilhoit holdings, some of which have been operated by that company for a period of 33 years. Phillips had previously purchased from the Wilhoit company 44 other stations located in northwestern Missouri.

Eleven of the service stations are located in Springfield, eight in Joplin, four in Carthage, and the balance are located one each in other towns. No radical change in the operation and management of the properties is contemplated at the present time according to Phillips officials. The purchase marks another step in the expansion of the Phillips marketing department, which already embraces marketing facilities in many cities from Canada to Mexican border. Fred W. Cordell has been appointed manager of the Missouri and Kansas divisions with headquarters at Springfield.

The refinery which the Wilhoit company has owned and operated at Joplin, Mo., for several years is not involved in the Phillips purchase.

LAKE PETROLEUM CO. TO MOVE

CHICAGO, Feb. 9.—The Lake Petroleum Co. plans to move its offices from the First National Bank to the Straus Building at the corner of Michigan Avenue and Jackson Boulevard, where it will occupy Suite 1712. The Straus Building now has a number of the important oil concerns among its tenants, including the Marland Refining Co., the Sun Oil Co., James B. Berry & Sons' Co., Universal Oil Products Co. and other well-known concerns.

BUYS OIL CO.

CHICAGO, Feb. 9.—The Shaffer Oil & Refining Co. has purchased and will continue the Purity Oil Co. of Charles City, Iowa.

HONOR D. W. MOFFITT IN JOINT MEETING

A bound volume containing nearly 200 personal tributes was presented to D. W. Moffitt, vice president of the Mid-Continent Petroleum Corp. at a joint meeting of the Tulsa Chamber of Commerce and Community Chest held in Tulsa Friday.

The occasion marked the close of Mr. Moffitt's five years of service as the head of the community chest, a position to which he was elected at the time it was first organized in Tulsa. Due to ill health he will not be able to continue as the active head of the organization although he was elected honorary president for life.

Mr. Moffitt has been active in Tulsa civic and church affairs for many years and the meeting in his honor was the occasion of many tributes from his associates. He is recovering from an illness incurred at the annual meeting of the American Petroleum Institute in December. He is not as yet able to leave his Tulsa home, the program in his honor being brought to him by radio.

SHELL FORMS COMPANY IN NEW ENGLAND STATES

NEW YORK Feb. 9. — Royal Dutch-Shell interests have embarked upon an important development program in the East Coast area, with incorporation of the Shell Eastern Petroleum Products, Inc. This new subsidiary organization will operate in the principal eastern states. Earlier reports had indicated that the concern would centralize in New England.

The new company enters the field through purchase of the fixed assets of the New England Oil Refining Co., which markets "Mayflower" gasoline throughout New England.

Andrew F. Carter, former president of the New England Oil Refining Co., is president of Shell Eastern Petroleum Products, Inc. Other officers are William F. Filer, of Roxana Petroleum Corp., vice president; U. F. O'Brien, secretary and treasurer; Elizabeth T. Kirklin, assistant secretary; and William C. Stagg, assistant secretary and treasurer.

Directors of the new Royal Dutch-Shell subsidiary are as follows: J. C. van Eck, chairman of the board of Shell Union Oil Corp., chairman; Richard Airey, president of Asiatic Petroleum Co.; Avery D. Andrews, chairman of the board of Asiatic Petroleum; Samuel F. Pryor, Andrew F. Carter, Frederick W. Allen of Lee, Higginson & Co.; Ulrich deB. Daly, president of the Shell Oil Co. of California; and James H. Brookmire, secretary of the Shell Union Oil Co.

Operations of the new company are expected to be on a broad scale, the company being advantageously situated to market production of both the California and South American refineries of the Royal Dutch-Shell interests.

CHAPIN AT MINNEAPOLIS

Charles H. Chapin is now the manager of the Minneapolis division of the Marland Refining Co. Mr. Chapin has been continuously with the Marland organization for several years, handling Michigan and some Chicago trade. He was for several months assistant manager of the Chicago office.

MEETING OF A.O.M.A. OPENED AT CHICAGO

CHICAGO, Feb. 12.—The spring convention and annual meeting of the American Oil Men's Association opened this morning. The registration during the forenoon was light with few out-of-town oil men among those who did register. There was a fair attendance at the noon luncheon as many local oil men came in and at the business session which followed immediately the topic for discussion was "Salesmanship, the Need of It," the address being delivered by H. E. Roberts, sales manager for the manufacturers of a well-known reproducing device.

The annual meeting and the election of officers takes place Wednesday morning. Thursday is expected to be the most interesting day of the meeting as on that day the Dixie Jobbers Association as at present functioning in three states will be on hand to explain the Dixie idea to the jobbers and many will be here to hear from them.

On Wednesday afternoon W. R. Boyd, Jr., of the American Petroleum Institute, has agreed to be present and tell the members of the St. Louis meeting about the code of trade practices. Following his talk there will be a discussion of the proposed code. Other meetings on the same date have interfered with the attendance of oil men at the opening day of the meeting but the management has been assured that there will be many who will come for the succeeding days of the convention.

DUNDEE CRUDE PRESENTS NEW REFINERY PROBLEM

MUSKEGON, Mich., Feb. 9.—A possible solution of the critical situation facing Muskegon producers of Dundee crude oil is seen in the announcement made here by E. L. Hughes, president of Hughes & Co., of Chicago, that consideration is being given the erection of a $600,000 refinery in Muskegon.

The proposed refinery would have a daily capacity of 3,000 bbls. to start and might be increased in capacity as the development of the field seemed to warrant.

Mr. Hughes and his associates have been negotiating with the Greater Muskegon Chamber of Commerce and several large independent producers of Dundee oil in the Muskegon Field for 60 days and are now about ready to sign contracts for the oil at posted Mid-Continent prices less the cost of removing the sulphur.

Announcement on February 7 of the cut in the Dundee oil price from $1.26 to 50 cents per barrel by E. J. Bullock,

(Continued on Page 152)

EMPIRE AT EAST CHICAGO

The Empire Refineries, Inc., in carrying out the plan for a refinery at East Chicago, has abandoned the attempt to induce the City Council to agree in advance to grant franchises and has filed a petition with the Board of Public Works for a permit to construct the necessary pipe lines and railroad trackage in the streets of that city. The permit must have the approval of the City Council. There are good reasons to believe this will be granted quickly and the work will begin at once. Some members of the City Council are known to be in favor of bringing the refinery to East Chicago and others have stated they would not oppose the movement but wanted the usual course of procedure followed. The site will be the Baldwin Locomotive Works tract which has 372 acres and is very desirably located both as to lake and railroad transportation.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

EXPLOSIVES IN INTERNAL COMBUSTION ENGINES

Have you any information covering the use of the high explosives for developing power in an engine similar to the automobile engine? I can see that some slight changes in the engine might be necessary but the great concentration of the explosive would permit long runs per unit of weight.—C. P. T.

The idea that explosives could be used in a properly enclosed vessel as a source of power is quite an old one. In fact, Hughens laid the foundation for the internal combustion engine in 1680 when he built an engine in which he embodied an open ended cylinder with a piston. Gunpowder was exploded when the piston was at the bottom of the cylinder and the explosion forced it upward. The gases were expelled through leather valves, and the cooling of the gases that remained in the cylinder created a vacuum. The atmospheric pressure, acting on the piston forced it down into the cylinder, doing work by its movement. Structural defects caused the failure of this engine and it was nearly 200 years later, in 1860, when the first marketable internal combustion engine was built by Lenoir.

One difficulty, not easily overcome, in the use of an explosive as a source of power is that it must be utilized in very small portions. Efforts to accomplish this have included solution in some other substance and various forms of mixtures to secure thorough distribution of the explosive material. A large number of substances have been investigated for use in this manner. The experiments have not met with any marked success, because the explosives are either insoluble, soluble with difficulty, or tend to separate with disastrous concentrations. It is clear that any explosive, otherwise satisfactory, must not concentrate by deposition in the fuel itself and there must be no solid residue in the cylinder. Explosives frequently produce acids when exploded and serious corrosion results from them.

The energy stored in a fuel is first released in the form of heat which is transformed into mechanical work. Heat value may be indicated in calories. Nitroglycerin yields only 1,450 calories per kilo; TNT yields 720; blasting powder 700; high gravity gasoline 10,359. Other examples could be given to show that the hydrocarbons are much superior to the most powerful explosives from the standpoint of energy. The stored energy of the hydrocarbons is released at a slow rate, while that of the explosive is suddenly released, and, all at once. It is the sudden release of their stored energy which gives technical value to explosives, and it is this property of the explosive substances which some people believe would be valuable in a motor fuel. It is claimed that the addition of small quantities of explosives would overcome the initial inertia of the ordinary automotive fuels by the sudden liberation of the energy of the explosive, but whether this would be a net advantage seems to be very doubtful.

A German writer thinks there is greater promise in using explosive dusts as a motor fuel, and mentions the well-known fact that flour is highly explosive when mixed with air in suitable proportions. Reports of the use of coal dust for internal combustion have appeared in the German press and success claimed. It is also suggested that such fuels have chemicals added to them to increase inflammability in the cylinder, but data as to the result of trials, if any, are not available. There might be something in the idea if we were faced with a liquid fuel famine, but in view of the prospects for an abundance of liquid fuel for an indefinitely long period, the question of using a solid fuel as a substitute for liquid fuel is not one of very great importance for the time being.

COLOR OF PETROLEUM PRODUCTS

We want to know the most widely accepted standard used in the petroleum industries for testing the color of oils. Our researchers have recently introduced us into the petroleum field and so far we are under the impression that considerable confusion exists in regard to color standards, some refineries using one scale which is totally different from another refiner's scale. Will you therefore be so kind as to let us know what method of testing and what scale is most universally used at the present time?—J. L. H.

Methods for measuring the color of the lighter products, such as gasoline, naphtha, kerosene, etc., and that of lubricating oils, have been standardized by the American Society for Testing Materials. These methods have a recognized standing for reliability as is evidenced by the fact that they are accepted by the Federal Government, and published in United States Government Master Specification for Lubricants and Liquid Fuels, Technical Paper 323B, Bureau of Mines.

The Significance of Tests of Petroleum Products is the title of a report from A.S.T.M. Committee D-2, and a part of their statement about color is given.

Numerical units of color are based on determinations by transmitted light. This is determined either by matching a given color standard or the color required to match a given depth of oil. Commercial usage divides the products into "white" products, which range from practically colorless to "pale straw," and those which range from "pale straw" to darker.

The A.S.T.M. selected the Saybolt chromometer for the measurement of the color of white products. Color is determined in this method by measuring the depth of oil necessary to match a standard color glass. Other instruments that may be used are the Stammer and Lovibond, but neither has been standardized by the society. The products to which the Saybolt instrument is applied includes naphtha, illuminating oils, technical oils and paraffin wax.

The color of wax is important and existing color requirements are based practically entirely on the experience of the user. The color of wax is always determined on the molten wax. The A.S.T.M. has not standardized any method for the color measurement of wax but the Lovibond instrument and scale is frequently used.

This society has chosen the Union colorimeter for color determinations of pale straw and darker products. Measurement of color by this instrument depends upon matching color of a given depth or thickness of oil with various color standards. Other instruments used for measuring color of the same products are the Tag-Robinson and the Lovibond. The class of products to which the Union Colorimeter is applied includes, spindle oils, engine oils, filtered cylinder oils, and petrolatums.

MARACAIBO CRUDE OIL

Is it possible for you to give me some details about the quality, analysis if you have it, of the crude oil which is produced in the Maracaibo, Venezuela, Field?—R. J.

The United States Bureau of Mines has published a partial analysis of the oil from the Maracaibo district in Technical Paper 346, Properties of Typical Crude Oils from the Producing Fields in the Western Hemisphere, by Kraemer and Calkin. The material given below is from this paper.

The analysis on page 36 represents a sample of oil from the Caribbean Petroleum Co.:

Gravity, 17.9 A.P.I.; sulphur, 2.51 per cent; water, nil.

		Per cent
Gasoline and naphtha	53.2 grav.	=14.6
Gas oil	32.5 grav.	=15.2
Lubricating distillate	16 to 24.5	=23.5
Residuum, sp. gr.	1.035	=46.6

"Two samples from the Lake Maracaibo Basin are included in this paper. They are much alike, being fairly heavy, black oils, rather high in sulphur (average 2.58 per cent), rather low in 'gasoline and naphtha' (average 11.9 per cent), and containing considerable portions of vacuum distillates, which do not show wax content. They show no kerosene distillate by the Bureau of Mines analysis and interpretation. The carbon residue of residuum is high, as might be expected from the large content of sulphur. The samples are similar to many of the crudes, especially the heavier high-sulphur oils of Kern County, California. These Kern County crudes do not contain as much sulphur as the Venezuela samples and the carbon of the residuum is correspondingly less."

DYNAMITE AND GELATINIZED NITROGLYCERIN

What is the difference between dynamite and explosive gelatine? Are they not both forms of nitroglycerin? When were these explosives invented?—V. S. A.

Dynamite and explosive gelatine contain nitroglycerin as the active material. The original form of dynamite, invented by Alfred Nobel in 1866, was prepared by absorbing nitroglycerin in infusorial earth which is an earth containing the remains of infusoria. These are a group of very small organisms, both plant and animal, and are frequently called diatoms; hence the name dynamite. Other substances have since been used in place of infusorial earth.

The gelatinizing of nitroglycerin was also the invention of Nobel in 1875. This is a solid solution of nitrocellulose in nitroglycerin. The Swedish patent gives all the important points in a concise form as translated by Escales. German patent 4,829; British patent 4,179 (1875); Swedish patent, July 8, 1876.

"As is well known, nitroglycerin in a liquid form has been found too dangerous for commercial use. On account of this danger I have invented dynamite, i.e., nitroglycerin absorbed in very porous materials. However, dynamite has only two-thirds the strength of nitroglycerin and is spoiled by contact with or under pressure of water, because the liquid nitroglycerin is in this way displaced from dynamite. For this reason I have attempted to give the nitroglycerin a solid form in another way. I attain this object by a gelatinization process. This is done by dissolving in the nitroglycerin, gently heated on a water bath, nitrocellulose such as is used in the preparation of collodion. The explosive liquid thereby becomes more or less viscous, and after it has absorbed 6 to 7 per cent of its weight of nitrated vegetable fiber it attains a rubbery or gelatinous consistency, particularly well suited for industrial purposes. However, I do not limit the solution to the above composition, because for the various purposes various degrees of hardness of the explosives are required, and the degree of hardness depends upon the relative amount of dissolved, nitrated vegetable fibers. In the gelatinization of the nitroglycerin care should be taken that (1) this liquid contains no impurities which will prevent it from dissolving nitrated cellulose when warm and affecting it adversely, (2) that only readily soluble nitrocellulose is used, and (3) that solution of the nitrated cellulose, especially if the latter be matted together, is facilitated by working and kneading the mass.

"The gelatinized nitroglycerin can be easily pressed into cartridges or given other shapes."

LEAD IN DOCTOR SOLUTIONS

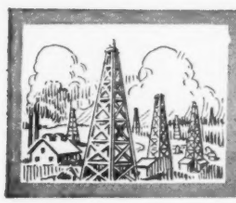
In our refinery treating operations we frequently have occasion to test the doctor solution for lead content. I wonder if you could recommend to us some satisfactory methods which could be carried out in the ordinary refinery laboratory and which will at the same time give reasonably accurate results?—V. H.

A short method for determining litharge in doctor solution was described by Schuessler and Todd in The Oil and Gas Journal, March 10, 1927, page 200. This is the molybdate method, in which the lead is precipitated as molybdate from a faintly acid solution and the end of the reaction is recognized by testing a drop of the solution with a drop of tannin solution, which gives a yellow coloration when an excess of ammonium molybdate is present.

They outline the method as follows: Weigh out 5 grams of clear doctor solution into a 250 cc. beaker, add 150 cc. distilled water, acidify with glacial acetic acid in the presence of blue litmus paper as indicator. Heat to boiling and titrate with the standard ammonium molybdate solution.

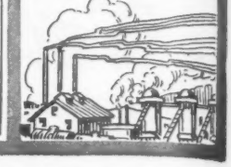
$$\frac{\text{cc. standard} \times \text{titer cc.}}{\text{Weight of sample}} \times 100 = \text{PbO}\,\%$$

Where extreme accuracy is not desired the sample may be pipetted out with a 5 cc. pipette. We have found that 5 cc. of doctor ranging from 15 to 17 degrees will weigh from 5.42 to 5.5 grams. On doctor solutions of 12 to 14 gravity, using an ammonium molybdate equivalent to 0.00549 gm. PbO per cc., the percentage of PbO is 1/10th of the titration figure. As for example, a 5 cc. sample in routine work gives a titration of 15 cc., the percentage is 1.5 PbO.



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.



GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	Feb. 12		Feb. 5		Jan. 29	
50-52 450 endpoint	.06½	.06⅝	.06½	.06¾	.06¾	
56-58 450 endpoint	.06½	.06¾	.06½	.06¾	.06¾	
58-60 450 endpoint	.06½	.06¾	.06½	.06¾	.06¾	
*56-60 437 endpoint (U. S. Motor)	.0709		.0702		.0775	
*60-62 437 endpoint	.0745		.0726		.0773	
*60-62 400 endpoint	.0750		.075		.0825	
*64-66 375 endpoint	.0810		†.08		.0850	
68-70 360 endpoint	.07¾	.08	.08½		.08½	
64-66 437 endpoint (blend)	.06½	.06¾	.06¾		.07	.07¼

*Weighted average prices February 11, 4 and January 28, as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices given are general market.

NORTH TEXAS—						
56-58 450 endpoint	.06¼	.06½	.06½	.06¾	.06¾	
58-60 450 endpoint	.06¼	.06½	.06½	.06¾	.06¾	
58-60 437 endpoint (U. S. Motor)	.06½	.06¾	.06¾	.07	.07¼	.07½
60-62 400 endpoint	.07	.07¼	.07½		.07½	.07¾
64-66 390 endpoint	.07¼	.07½	.07⅝	.07¾	.07⅝	
64-66 375 endpoint	.07¾	.08	.07¾	.08	.07¾	.08
68-70 360 endpoint	.08		.08½	.08¾	.08½	.08¾
64-66 437 endpoint (blend)	.06½		.06¾	.07	.07	.07¼
NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.07¼	.07½	.07¼	.07½	.07½	.07¾
ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.07¼		.07¼		.07½	
PENNSYLVANIA—						
52-54 Naphtha	.08½	.08¾	.08½	.08¾	.08½	.08¾
54-56 Naphtha	.08¾	.09	.09½	.09¾	.09½	.09¾
58-60 Gasoline	.09¼	.09½	.09½	.09¾	.09¾	.10
60 Gasoline	.09¾	.10	.10¼	.10½	.10¼	.10½
62 Gasoline	.10½	.10¾	.10½	.10¾	.10½	.10¾
64 Gasoline	.10½	.10¾	.10¾	.11	.10¾	.11
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.09	.10	.09½	.10	.09½	.10
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.06½	.06¾	.06½	.06¾	.06⅞	
56-58 450 endpoint	.06½	.06¾	.06⅝	.06¾	.06⅞	
58-60 437 endpoint (U. S. Motor)	.06⅝	.07	.06¾	.07	.06⅞	.07
60-62 400 endpoint	.07¼	.07½	.07¼	.07½	.07½	
64-66 375 endpoint	.08	.08¼	.07⅞	.08	.08	
68-70 360 endpoint	.08¼	.08½	.08¼	.08½	.08¼	.08½
64-66 437 endpoint (blend)	.06⅞	.07⅛	.07	.07⅜	.07¼	.07½
GULF COAST (Export)—						
58-60 (U. S. Motor)	.08½		.08½		.08½	
60-62 400 endpoint	.09½		.09½		.09½	
61-63 390 endpoint	.09¾		.09¾		.09¾	
64-66 375 endpoint	.10		.10		.10	

NATURAL GASOLINE

OKLAHOMA (Group 3)—	Feb. 12		Feb. 5		Jan. 29	
Grade A, 72-79.9, 375 e.p., rec. 90%	.07⅜		.07¼		.07¾	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06¾		.06½		.06¾	.07
Grade B, 76-83.9, 375 e.p., rec. 85%	.05½	.05¾	.05½		.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¼		.05	.05⅛	.05½	
Grade C, 80-90, 375 e.p., rec. 78%	.05⅛	.05¼	.04¾	.05	.05¼	.05½
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.07⅜		.07¼		.07½	.07¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06¾		.06½		.06¾	.07
Grade B, 76-83.9, 375 e.p., rec. 85%	.05½		.05½	.05¾	.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¼		.05	.05⅛	.05½	
Grade C, 80-90, 375 e.p., rec. 78%	.05¼		.04¾	.05	.05¼	.05½
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.06¾	.07	.07		.07	
Grade BB, 84-92, 375 e.p., rec. 85%	.05½		.05¾	.06	.05¾	.06
Grade C, 80-92, 375 e.p., rec. 78%	.05⅜	.05½	.05¼	.05½	.05½	.05¾
CALIFORNIA—						
75-78, 375-390 endpoint	.07¾	.08¼	.08	.08½	.08	.08½
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.07⅜		.07¼	.07½	.07¼	.07½
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06¾		.06¼	.06½	.06½	.06⅝
Grade B, 76-83.9, 375 e.p., rec. 85%	.05½	.05¾	.05½	.05¾	.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¼		.05	.05⅛	.05½	
Grade C, 80-90, 375 e.p., rec. 78%	.05¼		.05		.05¼	

BURNING OIL

OKLAHOMA (Group 3)—	Feb. 12		Feb. 5		Jan. 29	
41-43 water white Kerosene	.05½	.05⅜	.05	.05¼	.05	.05¼
42-44 water white Kerosene	.05¾	.06	.05⅞	.06	.05⅞	.06
NORTH LOUISIANA—						
41-43 water white Kerosene	.06		.06		.05¾	.06
NORTH TEXAS—						
41-43 water white Kerosene	.05¼	.05½	.05¼	.05½	.05¼	.05½
40-42 water white Kerosene	.05¼		.05¼		.05¼	
ARKANSAS—						
41-43 water white Kerosene	.05¾	.06	.05¾	.06	.05¾	.06
PENNSYLVANIA—						
43 Kerosene prime white	.06¾	.07	.06¾	.07	.06¾	.07
45 Kerosene water white	.07	.07¼	.07	.07¼	.07	.07⅛
46 Kerosene water white	.07½	.07¾	.07½	.07¾	.07½	.07¾
47 Kerosene water white	.07¾	.08	.07¾	.08	.07½	.07¾
300 Mineral Seal	.07	.07¼	.07	.07¼	.07	.07¼
CALIFORNIA—						
38-40 water white Kero. (high-burning test)	.06	.06½	.06	.06½	.06	.06½
Engine distillate, 43-44, 445 endpoint	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 42-44, 480 endpoint	.07	.07½	.07	.07½	.07	.07½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.05¼	.05¾	.05⅛	.05¼	.05	.05¼
42-44 water white Kerosene	.05¾	.06	.05½	.05¾	.05¾	.06
GULF COAST (Export)—						
41-43 prime white	.06¾					
41-43 water white	.07¾					

FUEL OILS

OKLAHOMA (Group 3)—	Feb. 12		Feb. 5		Jan. 29	
Below 18 Fuel Oil, per bbl.	.50	.55	.50	.55	.50	.55
18-22 Fuel Oil, per bbl.	.55	.57½	.55	.57½	.55	.57½
22-26 Fuel Oil, per bbl.	.62½	.65	.62½	.65	.60	.62½
24-26 Fuel Oil, per bbl.	.65	.67½	.65	.67½	.65	.67½
26-30 Fuel Oil, per bbl.	.75	.80	.75	.80	.67½	.70
28-30 Fuel Oil, per bbl. (industrial)	.85	.87½	.85	.87½	.82½	.85
28-30 Fuel Oil, per bbl. (zero cold test)	1.00	1.05	1.00	1.05	.95	1.00
32-36 Gas Oil (industrial)	.02¾	.03	.02¾	.03	.02⅝	.02¾
32-36 Gas Oil (straw color)	.02⅞	.03⅛	.02⅞	.03⅛	.02¾	.03⅛
36-38 Distillate	.03⅝	.03¾	.03⅝	.03¾	.03⅛	.03⅜
38-40 Straw Distillate	.03¾	.04⅛	.03¾	.04⅛	.03¾	.03⅜
NORTH TEXAS—						
Below 20 Fuel Oil	.60	.62½	.60	.62½	.57½	.60
24-26 Fuel Oil, per bbl.	.62½	.67½	.62½	.67½	.60	.65
32-36 Gas Oil (straw)	.02¾	.03	.02¾	.03	.02⅝	.02¾
38-40 Straw Distillate	.03¾	.04	.03¾	.04	.03⅝	.03¾
NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.70	.80	.75	.80	.75	
32-36 Gas Oil	.03½		.03¼		.03	
ARKANSAS—						
33-36 Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
32-36 Gas Oil (straw)	.03¼		.03¼		.03	
16-22 Refinery Fuel Oil, per bbl.	.70	.75	.70	.75	.65	.70
GULF COAST (South Texas)—						
Gas Oil	.04	.04¼	.04¼	.04½	.04¼	.04¼
Bunker C Fuel (cargo lots), per bbl.	.65	.70	.80	.90	.80	.90
Bunker C Fuel (small lots)	.85	.90				
PENNSYLVANIA—						
30-34 Fuel Oil	.04½	.04⅝	.04½	.04⅝	.04½	.04⅝
36-40 Fuel Oil	.04⅝	.04¾	.04⅝	.04¾	.04⅝	.04¾
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
27-32 Distillate	.03	.03½	.03	.03½	.03	.03⅛
15-20 Fuel Oil, Bunker (at tide water)	.70	.85	.75	.85	.75	.85
15-20 Fuel Oil (cargo lots), per bbl.	.70	.85	.70	.85	.70	.85
27 plus Diesel, per bbl.	.95	1.05	.95	1.05	.95	1.05
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, Group 3, bbl.	.62½	.67½	.62½	.67½	.60	.65
18-22 (Group 3), per bbl.	.55	.57½	.55	.57½	.55	.60
16-20 Smackover, per bbl.	.87½	.90	.87½	.90	.85	.90
28-30 Fuel Oil (zero)	1.00	1.10	1.00	1.10	.95	1.00
32-36 Gas Oil, zero	.03⅛	.03⅜	.03⅛	.03⅜	.03	.03⅛
32-36 Gas Oil (industrial)	.02⅞		.02⅞		.02¾	.02⅞
36-38 Distillate	.03⅜	.03⅞	.03¾	.03⅞	.03⅝	.03⅞
38-40 Straw Distillate	.03⅞	.04	.03⅞	.04	.03¾	.03⅞

LUBRICATING OIL AND WAX

OKLAHOMA (Group 3)—	Feb. 12		Feb. 5		Jan. 29	
100 vis., 2 color, 20-25 cold test	.06	.06½	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.05¼	.05½	.05¼	.05½	.05¼	.05½
150 vis., 3 color, 20-25 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
150 vis., 4 color, 20-25 cold test	.07	.07¼	.07	.07¼	.07	.07¼
180 vis., 3 color, 23-28 cold test	.08¾	.09	.08¾	.09	.08¾	.09
180 vis., 4 color, 23-28 cold test	.08¼	.08¾	.08¼	.08¾	.08¼	.08¾
180 vis., 5 color, 23-28 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
200 vis., 3 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
200 vis., 4 color, 23-28 cold test	.09	.09¼	.09	.09¼	.09	.09¼
200 vis., 5 color, 23-28 cold test	.08½	.08¾	.08¼	.08¾	.08½	.08¾
240 vis., 3 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 4 color, 25-30 cold test	.11¾	.12	.11¾	.12	.11¾	.12
240 vis., 5 color, 25-30 cold test	.10¾	.11	.10¾	.11	.10¾	.11
280 vis., 3 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
280 vis., 4 color, 25-30 cold test	.12¾	.13	.12¾	.13	.12¾	.13
280 vis., 5 color, 25-30 cold test	.11¾	.12	.11¾	.12	.11¾	.12
Cylinder Stocks:						
600, steam refined, light green	.09	.10	.09	.12	.09	.12
600, steam refined, dark green	.08		.08	.10	.08	.10
190-200 vis. @ 210 Bright Stock	.33	.35	.31	.35	.31	.35
150-160 vis. @ 210 Bright Stock	.30	.32	.29	.32	.28	.31
Waxes:						
124-126 White Crude Scale Wax	.03⅞	.04⅛	.04½	.04¾	.04¾	
PENNSYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom	.07¾	.08	.07¾	.08	.07¾	.08
36 Miners' Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
150, 3 color	.21½	.22	.21½	.22	.21½	.22
180, 3 color	.25½	.26	.25½	.26	.25½	.26
200, 3 color	.28	.28½	.28	.28½	.28	.28½
220, 3 color	.30	.30½	.30	.30½	.30	.30½
600, steam refined	.22	.22½	.22½	.23	.22½	.23
635, steam refined	.27½	.28	.27½	.28	.27½	.28
650, steam refined	.27½	.28	.29½	.30	.29½	.30
600, Pennsylvania flash	.31½	.32	.31½	.32	.31½	.32
630, Pennsylvania flash	.36½	.37	.36½	.37	.36½	.37
600, E filtered	.25½	.26	.26½	.27	.26½	.27
600, D filtered	.29½	.30	.29½	.30	.29½	.30
550, E filtered	.15½	.16	.15½	.16	.15½	.16
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.39	.40	.39	.40	.39	.40
†122-124 White Crude Scale Wax	.04¼		.04¾		.05	.05¼
†124-126 White Crude Scale Wax	.04¾		.05		.05¼	.05⅝

*At Warren, Pa. †At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.06½	.07	.06½	.07	.06½	.07
No. 3 color, 200 vis., pale oil	.09		.09		.08½	.09
No. 3 color, 300 vis., pale oil	.10½	.11	.10½	.11	.11	.11¼
No. 3½ color, 500 vis., pale oil	.12		.12		.12½	.13
No. 4 color, 750 vis., pale oil	.15	.15½	.15	.15½	.15	.15¼
No. 5 to 6 color, 200 vis., red oil	.08¼	.08½	.08¼	.08½	.08¼	.08½
No. 5 to 6 color, 300 vis., red oil	.09¼	.09½	.09¼	.09½	.09¼	.09½
No. 5 to 6 color, 500 vis., red oil	.10¼	.10½	.10¼	.10½	.10½	.11⅛
No. 5 to 6 color, 750 vis., red oil	.13¼	.13½	.13¼	.13½	.13¼	.14
No. 2½ color, 200 vis., pale filtered	.11½		.11½		.11¾	.12¼
No. 2½ color, 300 vis., pale filtered	.13	.13¼	.13	.13¼	.13½	
No. 2½ color, 500 vis., pale filtered	.15½	.16	.15½	.16	.15½	.16
No. 2½-3 color, 750 vis., pale filtered	.18	.20	.18	.20	.18	.20

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13¼	.13	.13¼	.13	.13¼
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½-5 color	.15¼	.15½	.15¼	.15½	.15¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.16¼	.16	.16¼

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Feb. 12	Feb. 5	Jan. 29
Gasoline, U. S. Motor, 58-60, 437	.10¼	.10¼	.10¼
Kerosene, water white, 41-43	.08½	.08½	.09
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05	1.05	1.05
†Fuel Oil, Diesel, 28-30, per bbl.	2.00	2.00	2.00
Gas Oil, 32-36 gravity	.05¼	.05¼	.05¼
25 pale Paraffin Oil	.11¾	.11¾	.11¾
28 pale Paraffin Oil	.07½	.07½	.07½
285 red Paraffin Oil	.11½	.11½	.11½
250 red Paraffin Oil	.11	.11	.11
225 red Paraffin Oil	.09½	.09½	.09½
200 red Paraffin Oil	.09	.09	.09
Refined Wax:			
120-122 a.m.p., per lb.	.05⅜	.05⅜	.05⅜
125-127 a.m.p., per lb.	.05⅝	.05⅝	.05¾
130-132 a.m.p., per lb.	.06⅜	.06⅜	.06⅜
133-135 a.m.p., per lb.	.07⅛	.07⅛	.07⅛
135-137 a.m.p., per lb.	.07⅝	.07⅝	.07¾
Petrolatum in barrels, carload lots, per lb.:			
Dark green	.02	.02	.02
Amber	.03½	.03½	.03½
Extra amber	.03¾	.03¾	.03¾
Cream	.06½	.06½	.06½
Lily white	.07½	.07½	.07½
Snow white	.08½	.08½	.08½

*Lighterage, 5.0c a barrel extra. †Lighterage, 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Feb. 12	Feb. 5	Jan. 29
Gasoline, U. S. Motor, 58-60 437, in cases	.2640	.2640	.2640
Kerosene, standard white, in cases	.1765	.1765	.1765
Kerosene, water white, in cases	.1890	.1890	.1890
600, steam refined cylinder stocks, in bbls.	.30½ .31	.30½ .31	.31 .32
635, steam refined	.32 .33	.32 .33	.32 .33
650, steam refined	.36 .37	.36 .37	.37 .38
600, Pennsylvania flash	.38 .39	.38 .39	.39 .40
630, Pennsylvania flash	.43 .44	.43 .44	.43 .44
600, Warren E	.34 .35	.34 .35	.34 .35
600, Oil City E	.33	.33	.33
Light 140-150 Bright Stocks	.46	.46	.47
Dark 140-150 Bright Stocks	.45	.45	.46

LOS ANGELES EXPORT PRICES

	Feb. 12	Feb. 5	Jan. 29
Kerosene, water white	.05½ .06	.05½ .06	.05½ .06
U. S. Motor Gasoline, 53-55, 437 e.p.	.07½ .08	.07½ .08	.07½ .08

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (January 11)	.80
Other fields	See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE
Carson and Hutchinson

Below 32 gravity	$ .72
32-32.9	.78
33-33.9	.81
34-34.9	.84
35-35.9	.87
36-36.9	.90
37-37.9	.93
38-38.9	.96
39-39.9	.99
40-40.9	1.02
41-41.9	1.05
42-42.9	1.08
43-43.9	1.11
44 and above	1.14

Wheeler County

Below 30 gravity	$ .70
30-30.9	.76
31-31.9	.82
32-32.9	.88
33-33.9	.91
34-34.9	.94
35-35.9	.97
36-36.9	1.00
37-37.9	1.03
38-38.9	1.06
39-39.9	1.09
40-40.9	1.12
41-41.9	1.15
42-42.9	1.18
43-43.9	1.21
44 and above	1.24
Gray County	See gravity table

Humble Oil & Refining Co., and Magnolia Petroleum Co., January 24, 1929.

WEST TEXAS

Iatan*	Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler and Glasscock (July 26)‡	$ .85
Chalk†	.65
Mitchell†	.65

*Includes Howard County and Westbrook Fields. Mariand Refining Co. pays $1.05 for Howard County crude, effective May 21.
†Magnolia Petroleum Co., January 26, 1929.
‡Posted by Humble Oil & Refining Co., Magnolia Petroleum Co., and Gulf Pipe Line Co.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (Below 36 gravity April 11)	$ .75
Bellevue	1.20
Urania (Oct. 16, 1928)	.90
East El Dorado (March 16, 1927)	1.00
Other fields	See gravity table

*Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co., and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co., Gulf Refining Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange Boling, Sour Lake, Humble, Sugarland, Raccoon Bend, High Island, Pierce Junction and Spindletop.)

Grade A (March 14)*	$1.20
Grade B	See gravity table
Jennings, La. (March 14)†	$1.05
Saratoga, Batson, Daytona, (March 14, 1927)‡	1.20
Markham (March 14)‖	1.00
High Island (December 14)¶	1.00

*Humble Oil & Refining Co. and other major buyers. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. ‖The Texas Company.
¶Posted by Gulf Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective January 25, 1929)

Rock Creek, Wyo.	$1.18
Salt Creek	See gravity table
Big Muddy	1.28
Grass Creek, heavy (July 27, 1928)	.90

(Continued on Page 142)

CRUDE OIL GRAVITY TABLE

Gravity—	Okla., Kans. N. C. Tex. 1	No. La. and Arkansas 2	Smackover, Ark. 3	Stephens Ark. 4	Gray County (Texas Panhandle) 5	Salt Creek, Wyo. 6	Grade B & Light Crude (G. Coast) 7	Somerset (South Central Texas) 8
24 and above	....	....	.90	....	....	....	....	....
Below 24	....	....	.75	....	....	....	....	....
Below 25	.60	....	....	....	....	....	1.05	....
25 to 25.9	.66	....	....	....	....	....	1.07	....
Below 26	....	....	....	....	....	....	....	....
26 to 26.9	.72	....	....	....	....	....	1.09	....
27 to 27.9	.78	....	....	....	....	....	1.11	....
Below 28	....	.78	....	.70	.69	....	....	....
28 to 28.9	.84	.84	....	.74	.69	....	1 13	....
29 to 29.9	.90	.90	....	.78	....	.90	1.15	....
30 to 30.9	.96	.96	....	.82	.81	.96	1.17	....
31 to 31.9	1.02	1.02	....	.86	.87	1.02	1.19	....
32 to 32.9	1.08	1.08	....	.90	.93	1.08	1.21	1.05
33 to 33.9	1.11	1.13	....	....	.96	1.11	1.23	1.07
34 to 34.9	1.14	1.14	....	....	.99	1.14	1.25	1.09
35 to 35.9	1.17	1.17	....	....	1.02	1.17	1.27	1.11
36 to 36.9	1.20	1.20	....	....	1.05	1.20	....	1.13
37 to 37.9	1.23	1.23	....	....	1.08	1.23	....	1.15
38 to 38.9	1.26	1.26	....	....	1.11	....	....	1.17
39 to 39.9	1.29	1.29	....	....	1.14	....	....	....
40 to 40.9	1.32	1.32	....	....	1.17	....	....	....
41 to 41.9	1.35	1.35	....	....	1.20	....	....	....
42 to 42.9	1.38	1.38	....	....	1.23	....	....	....
43 to 43.9	1.41	1.41	....	....	1.26	....	....	....
44 and above	1.44	1.44	....	....	1.29	....	....	....

Column 1, Note—Magnolia Petroleum Co. posted schedule January 24, 1929, making price below 26 gravity 60 cents per barrel, 26-26.9 gravity 65 cents, 27-27.9 gravity 70 cents, 28-28.9 gravity 75 cents, 29-29.9 gravity 80 cents, 30-30.9 gravity 90 cents and 31-31.9 gravity $1, with balance of the price schedule as shown.

Oklahoma—Humble Oil & Refining and Carter Oil Co. January 24, Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., The Texas Company, January 25.

North Central Texas—Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas, Iatan and Panola, Iatan posted a flat price of 93 cents by Magnolia on January 14, 1928), Currie, Nocona and Moran. Prairie, Sinclair and Gulf, The Texas Company, January 25, Humble Oil & Refining Co., January 24.

Kansas—Prairie, Sinclair and The Texas Company, January 25; Carter, January 24.

Column 2—Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer, and El Dorado only], Standard Oil Co. of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co., Magnolia Petroleum Co., schedule effective January 26 applies to Pine Island, Haynesville, Bull Bayou, Louisiana, and ElDorado, Ark., light crude. The Texas Company January 24 posted prices below 28 gravity at 6 cents differential per degree with minimum of 60 cents for all below 24 gravity.

Column 3—February 6, Louisiana Oil Refining Corp.; February 7, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co., and on February 10, Atlantic Oil Producing Co.

Column 4—Atlantic Oil Producing Co., Louisiana Oil Refining Corp., January 23.
Column 5—Humble Oil & Refining Co., Magnolia Petroleum Co., January 24, 1929.
Column 6—Midwest Refining Co., January 25, 1929. All crude over 37 gravity $1.23 per barrel.

Column 7—Humble Oil & Refining Co. and other major buyers January 26 (schedule ends 35 and above), with exception of Magnolia Petroleum Co., which stops at 31 degrees gravity. Sun Pipe Line Co. and The Texas Company posted 2 cents differential for each degree above 35 gravity and $1.37 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

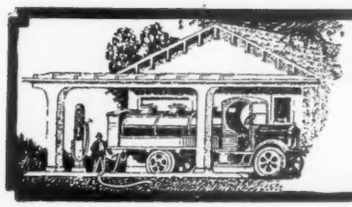
CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective January 18, 1929)

Gravity—	Richfield Torrance Olinda-Brea Alamitos Hts. Signal Hill Seal Beach Huntington Beach Athens Rosecrans-Dom'guez Inglewood 1	Whittier La Habra Coyote Hills 2	Midway-Sunset Elk Hills Lost Hills Belridge Buena Vista Hills 3	Montebello 4	Santa Fe Springs 5	Coalinga 6	Wheeler Ridge 7	Orcutt 8	Ventura 9	Kern River Newhall-McKittrick 10
14 to 14.9	.70	.70	.50	.70	....	.50	.50	.85	.85	.50
15 to 15.9	.70	.70	.50	.70	....	.50	.50	.85	.85	.50
16 to 16.9	.70	.70	.50	.70	....	.50	.50	.85	.85	.50
17 to 17.9	.70	.70	.50	.70	....	.50	.50	.85	.85	.50
18 to 18.9	.75	.75	.56	.70	....	.56	.56	.85	.85	.50
19 to 19.9	.80	.80	.62	.75	....	.62	.62	.85	.85	.50
20 to 20.9	.85	.84	.68	.80	....	.68	.68	.85	.85	...
21 to 21.9	.89	.88	.74	.85	.89	.74	.74	.86	.86	...
22 to 22.9	.93	.91	.80	.90	.92	.80	.80	.87	.87	...
23 to 23.9	.97	.94	.85	.95	.95	.85	.85	.90	.90	...
24 to 24.9	1.01	.97	.90	.98	.98	.88	.88	.93	.94	...
25 to 25.9	1.05	1.00	.95	1.01	1.01	.91	.91	.95	.98	...
26 to 26.9	1.09	1.04	1.00	1.04	1.04	.94	.94	.97	1.02	...
27 to 27.9	1.13	1.08	1.05	1.07	1.07	.98	.97	....	1.06	...
28 to 28.9	1.17	1.12	1.10	1.10	1.10	1.02	....	....	1.10	...
29 to 29.9	1.21	1.16	1.16	1.13	1.15	1.06	....	....	1.14	...
30 to 30.9	1.25	1.20	1.22	1.16	1.20	1.10	....	....	1.18	...
31 to 31.9	1.30	....	1.28	....	1.25	1.14	....	....	1.22	...
32 to 32.9	1.35	....	1.34	....	1.30	1.18	....	....	1.28	...
33 to 33.9	1.41	....	1.40	....	1.35	1.22	....	....	....	...
34 to 34.9	1.47	....	1.46	....	1.40	1.26	....	....	....	...
35 to 35.9	1.53	....	....	....	1.45	1.30	....	....	....	...
36 to 36.9	1.59	....	....	....	1.50	....	....	....	....	...
37 to 37.9	1.65	....	....	....	1.55	....	....	....	....	...
38 to 38.9	1.71	....	....	....	1.60	....	....	....	....	...
39 to 39.9	1.77	....	....	....	1.65	....	....	....	....	...
40 to 40.9	1.83	....	....	....	....	....	....	....	....	...
41 to 41.9	1.89	....	....	....	....	....	....	....	....	...
42 to 42.9	1.95	....	....	....	....	....	....	....	....	...

*Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 22.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity. Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.
Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.
Column 3—Kern River, Newhall and McKittrick, 14 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33.9 gravity; Lost Hills, 14 to 34.9 gravity.

Columns 8 and 9 posted by Union Oil Co. only.
†On October 2, 1928, Standard Oil Co. of California discontinued contracting for purchase of Kern River crude and on October 20 established following prices on grades below 14 gravity: 11 to 11.9 degrees at 45 cents, 12 to 19 degrees at 50 cents.
On December 1, 1928, the Union Oil Co. adopted the above schedule of the Standard on Kern River crude and in addition posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11-11.9 gravity, 45 cents; 12 to 12.9 gravity, 55 cents; and 13 to 13.9 gravity at 65 cents. All grades of Elwood crude were cut 7 cents.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Feb. 12.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago, dist.	14.0	15.0	...	12.0
Decatur, Ill.	14.2	15.2	...	12.1
E. St. Louis	13.4	14.4	...	11.2
Joliet	14.4	15.4	...	12.3
Peoria	14.2	14.0	...	12.1
Quincy	14.2	15.2	...	11.9
Davenport, Ia.	17.5	18.5	3.0	12.3
Des Moines	17.5	18.5	3.0	12.3
Keokuk	17.6	18.5	3.0	12.3
Sioux City	17.1	18.1	3.0	11.9
Duluth, Minn.	17.5	18.5	2.0	12.9
Mankato	17.1	18.1	2.0	12.7
Minneapolis	17.2	18.2	2.0	12.9
La Crosse, Wis.	17.2	18.2	2.0	13.0
Milwaukee	16.1	17.1	2.0	11.9
Madison	16.3	17.3	2.0	12.1
Detroit, Mich.	17.8	18.8	3.0	13.7
Grand Rapids	17.7	18.7	3.0	13.6
Saginaw	17.9	18.9	3.0	13.8
Evansville, Ind.	17.0	18.0	3.0	13.0
Fort Wayne	17.4	18.4	3.0	13.4
Indianapolis	17.2	18.2	3.0	13.2
South Bend	17.4	18.4	3.0	13.4
Fargo, N. D.	18.9	19.9	2.0	14.9
Huron, S. D.	19.3	20.3	4.0	13.7
Sioux Falls	18.1	19.1	4.0	13.4
K. C., Mo.*	16.9	17.9	3.0	10.6
Springfield*	16.8	17.8	3.0	11.5
St. Louis*	15.9	16.9	2.5	11.3
St. Joseph	16.5	17.5	3.0	11.2
Wichita, Kans.	14.8	15.8	2.0	10.8
Bartlesville, Ok.	15.5	16.5	3.0	10.5

*State tax 2 cents; remainder city tax.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	11.9
V. M. & P. naphtha	16.2	12.9
Cleaner's naphtha	18.0	13.9
Stanisol	19.0	14.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting. Effective January 5.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 799 gallons	8.0
800 or more gallons	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline: 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month, and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	21.0	23.0	4.0	16.5
Augusta	21.0	23.0	4.0	15.5
Macon	21.0	22.0	4.0	16.5
Savannah	20.0	22.0	4.0	15.5
Birm'ham, Ala.	20.0	22.0	4.0	13.0
Mobile	21.0	23.0	4.0	15.0
Montgomery	22.0	24.0	4.0	16.5
Clarks'le, Miss.	21.0	23.0	5.0	13.0
Jackson	20.0	22.0	5.0	13.0
Natchez	20.5	22.5	5.0	14.0
Gulfport	22.5	24.5	5.0	14.0
Vicksburg	20.5	22.5	5.0	14.0
Jack'ville, Fla.	22.0	24.0	5.0	14.5
Miami	23.0	25.0	5.0	15.5
Pensacola	23.0	25.0	5.0	14.5
Tampa	22.0	24.0	5.0	14.5
Lexington, Ky.	20.0	22.0	5.0	15.5
Covington	20.0	21.0	5.0	15.5
Louisville	20.0	22.0	5.0	15.0
Ashland	21.0	23.0	5.0	15.5
Catlettsburg	21.0	23.0	5.0	15.5

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. Pensacola and Mobile taxes include 1-cent city levy. Gulf port tax includes privilege tax of 2 cents in addition to state tax.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
San Francisco	17.0	21.0	3.0	15.5
Los Angeles	16.5	20.5	3.0	15.5
Reno, Nev.	22.0	26.0	4.0	19.0
Portland, Ore.	17.5	21.5	3.0	16.5
Seattle, Wash.	16.5	20.5	3.0	16.5
Tacoma	16.5	20.5	3.0	16.5
Spokane	20.5	24.5	3.0	20.5
Phoenix, Ariz.	18.0	22.0	4.0	20.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	18.0	20.0	2.0	12.0
Fort Worth	18.0	16.0	2.0	12.0
Houston	16.0	20.0	2.0	13.0
San Antonio	13.0	17.0	2.0	11.0
El Paso	17 0	20.0	2 0	16.0
Texarkana	16.0	19.0	2.0	13.0
Muskogee, Ok.*	15.0	16.0	3.0	12.0
Okla. City*	16.0	18.0	3.0	12.0
Tulsa*	17.0	19.0	3.0	10.0
Ft. Smith, Ark.	16.0	19.0	5.0	13.0
Little Rock	18.0	21.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	16.5	18.25	2.0	12.25
McCook	17.75	19.75	2.0	13.75
Norfolk	16.75	18.75	2.0	12.75
N. Platte	17.75	19.75	2.0	13.50
Scottsbluff	17.75	19.75	2.0	13.25

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	16.0	18.0	3.0	14.5
Pueblo	17.0	20.0	3.0	14.5
Grand Junction	21.5	24.5	3.0	18.0
Casper, Wyo.	18.0	21.0	3.0	13.0
Cheyenne	19.0	22.0	3.0	14.5
Butte, Mont.	22.5	25.5	3.0	19.0
Helena	22.5	25.5	3.0	19.0
Salt Lake, Utah	21.0	24.0	3.5	17.0
Albu'que, N. M.	22.0	25.0	5.0	17.0
Boise, Idaho	23.5	26.5	4.0	19.0
Twin Falls	23.5	26.5	4.0	19.0

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlantic City	16.0	20.0	2.0	13.0
Newark, N. J.	16.0	20.0	2.0	13.0
Annapolis, Md.	18.0	22.0	4.0	13.0
Baltimore	18.0	22.0	4.0	13.0
Cumberland	18.0	22.0	4.0	13.0
Washington	16.0	20.0	2.0	13.0
Danville, Va.	18.0	23.0	5.0	13.0
Norfolk	19.0	22.0	5.0	13.0
Petersburg	19.0	23.0	5.0	13.0
Roanoke	19.0	23.0	5.0	13.0
Richmond	19.0	23.0	5.0	13.0
Ch'rlst'n, W. Va.	18.0	22.0	4.0	13.0
Keyser	18.0	22.0	4.0	13.0
Parkersburg	18.0	22.0	4.0	13.0
Wheeling	18.0	22.0	4.0	13.0
Charlotte, N. C.	18.0	22.0	4.0	13.0
Hickory	18.0	22.0	4.0	13.0
Mt. Airy	18.0	22.0	4.0	13.0
Salisbury	18.0	22.0	4.0	13.0
Ch'lston, S. C.	19.0	23.0	5.0	13.0
Columbia	19.0	23.0	5.0	13.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	16.0	18.0	...	15.0
New York*	16.0	18.0	...	15.0
Buffalo	16.0	18.0	...	14.0
Rochester	16.0	18.0	...	14.0
Syracuse	16.0	18.0	...	15.0
Boston, Mass.	18.0	20.0	2.0	15.0
Augusta, Me.	20.0	22.0	4.0	15.0
Manch't'r, N.H.	20.0	22.0	4.0	15.0
Burlington, Vt.	19.0	20.0	4.0	15.0

*Prices in steel barrels.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	16.5	19.5	5.0	16.0
Baton Rouge	16.5	18.0	4.0	14.5
Alexandria	16.0	19.0	4.0	16.0
LaFayette	16.0	19.0	4.0	14.0
Lake Charles	16.5	19.5	4.0	16.0
Shreveport	16.0	19.0	4.0	15.0
Knoxv'le, Tenn.	18.0	22.0	3.0	16.0
Memphis	16.0	20.0	3.0	12.5
Chattanooga	17.5	21.5	3.0	16.0
Nashville	17.0	21.0	3.0	16.0
Bristol	18.0	22.0	3.0	14.0
Lit. Rock, Ark.	18.0	21.0	3.0	13.0

*Tax of 5 cents includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
All Ohio points	17.0	18.0	3.0	12.0

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	15.0	*20.0	...	14.0
Philadelphia	15.0	*20.0	...	14.0
Scranton	15.0	*20.0	...	14.0
Allentown	15.0	*20.0	...	14.0
Altoona	15.0	*20.0	...	14.0
Erie	15.0	*20.0	...	14.0
Dover, Del.	18.0	20.0	3.0	14.0
Wilmington	18.0	20.0	3.0	14.0
Spring'f'd, Mass.	18.0	20.0	2.0	15.0
Worcester	18.0	20.0	2.0	15.0
Boston	18.0	20.0	2.0	15.0
Providence, R.I.	18.0	20.0	2.0	15.0
Hartford, Conn.	18.0	20.0	2.0	14.0
New Haven	18.0	20.0	2.0	15.0

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the state.

TANK WAGON CHANGES

February 2—Standard Oil Co. of Kentucky advanced the gasoline tank wagon and station prices 2 cents in Jackson, Miss., to 20 cents and 22 cents and the kerosene price was reduced to 13 cents.

February 7—Standard Oil Co. of Indiana reduced the gasoline station price in Peoria, Ill., to 14 cents.

Standard Oil Co. of Kentucky advanced the gasoline station price 1 cent in Macon, Ga., to 22 cents, the tank wagon and station prices 1 cent each in Birmingham, Ala., and the tank wagon and station prices 1.5 cents at Natchez, Miss. The station price was advanced 1 cent to 22 cents in Lexington, Ky. One-cent advances were posted in the kerosene price in Savannah, Ga., and Jacksonville, Tampa and Pensacola, Fla.

CRUDE PRICE CHANGES

On January 28, 1929, the Atlantic Oil Producing Co. and the Louisiana Oil Refining Corp. established a new schedule on Stephens, Arkansas posting all oil below 28 gravity at 70 cents and maintain a 4-cent differential per degree above 28 gravity with 32 gravity oil and above at 90 cents. The last previous price change was made August 2, 1928, when both companies posted all crude below 28 gravity at 75 cents with a 4-cent differential making the 32 gravity and higher, 95 cents. The prices from August 2 to January 28 have been incorrectly shown previously.

HYDROGEN SULPHIDE TO BE SAFETY TOPIC

MIDLAND Tex., Feb. 9.—Hydrogen sulphide will be the chief topic at the meeting of the petroleum section of the Texas Division of the National Safety Council in Midland, February 15. The meeting will be in charge of C. L. Hightower of Fort Worth, chairman of the Gulf States Division of the petroleum section of the safety council.

The program follows: "Rewards from Accident Prevention," H. N. Blakeslee, Chicago, petroleum representative of the National Safety Council; "The Superintendent's and Foreman's Place in the Safety Program," Don Wallace, Tulsa, safety director of the Mid-Continent Oil & Gas Association; "Poisonous Gases in the Oil Fields," V. H. Hayslip, Houston, representative of Humble Oil & Refining Co.; "Protection Against Gas Hazards and Treatment for Injury Cases," K. L. Marshall, district mining engineer, United States Bureau of Mines; "The Corrosion Problem," F. R. Staley of Fort Worth, chief chemist, Texas Pacific Coal & Oil Co.

The program was arranged jointly by the Gulf States Division, petroleum section, National Safety Council, United States Bureau of Mines, and Mid-Continent Oil & Gas Association.

GULF COAST MARKET

HOUSTON, Tex., Feb. 11.—Gulf Coast refinery markets opened the week with lubricating oils still showing a marked tendency toward sluggishness, fuel oils lacking in spot demand and gas oils firm only on the cracking stock and low sulphur content products. Lubricating stocks suffered no further open price reductions but concessions were known to be in order to get business, sellers being anxious to keep their stocks moving.

Fuel oils, although reflecting a somewhat firmer tone the past week with one major seller out of the picture, were at a standstill the past week with not enough business being done to gauge a market. Sellers have been attempting to hold market but buyers are of the opinion that any sales made will have to be done at lower prices than previously quoted. Demand is confined to bunkering ships and that is fairly well controlled by contracts and connections.

CRUDE OIL PRICES

(Continued from Page 141)

Grass Creek, light	1.36
Mule Creek (May 1, 1928)	1.10
Elk Basin	1.36
Lance Creek	1.33
Poison Spider (March 14, 1927)	1.00
Notches (March 14, 1927)	.85
Rex Lake (February 22)	1.10
Osage	1.33
Lost Soldier (contract)	1.00
Hamilton Dome (March 14, 1927)	.85
Greybull	1.57
Cat Creek (Montana) (July 27, 1928)	1.40
Sunburst (Montana) (May 18, 1928)	1.60
Torchlight	1.33
Artesia (July 27, 1928)	1.40
Hogback (New Mexico) (July 27, 1928)	1.40

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTH-WESTERN TEXAS

Luling (January 11)*	$ .40
Mirando (January 7)†	.90
Rockdale-Minerva (April 15):	
Below 28 gravity	1.25
28-28.9 gravity	1.27
29-29.9 gravity	1.29
40 and above	1.31
Thrall‡	...
Callihan (May 16)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.
‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight.

EASTERN STATES

(Effective January 4, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$4.19
Bradford District Oil in National Transit Lines (Pennsylvania)	4.19
Penna Grade Oil in National Transit Lines (Pennsylvania)	4.00
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	4.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (July 13)	1.65
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (January 25, 1929)	1.65
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (January 25 1929)	1.75
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (Sept. 14, 1928)	1.75
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29)	.60

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective January 25, 1929)

Lima	$1.50
Wooster	1.63
Illinois	1.45
Indiana	1.37
Princeton	1.45
Plymouth	1.10
Waterloo (November 17, 1926)	1.35
Western Kentucky (Sept. 17, 1928)	1.53
Midland, Mich. (January 15, 1929)*	1.70
Saginaw, Mich., Saginaw Sand (February 10)†	1.80
Saginaw, Mich., Berea Sand (February 10)†	1.70
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky, (March 16)‡	1.60
Oil in lines in Stoll Oil Refining Co. in Oil City, Ky. (Oct. 1, 1928)§	1.70
Oil Springs (Canada)¶	1.97
Petrolia (Canada)¶	1.90

*Posted by Pure Oil Co.
†Posted by Sun Oil Co.
‡Posted by Parsagon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.

MEXICAN CRUDE

Panuco heavy (f.o.b. Mexican ports)	$1.15

Note—Due to the fact that the exportation of Tuxpan light crude has become a negligible factor, prices will no longer be published.

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ATLANTA BOSTON CHICAGO HOUSTON KANSAS CITY

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Oil Securities Inactive and Sagging

General Market Affected by Nervousness as Change in Sentiment Is Noted. Selling Pressure Exerted

By Special Correspondent

The oils were inactive last week in a market which exhibited an unusual degree of nervousness. The meetings of the board of governors of the Federal Reserve district of New York caused much uneasiness along Wall Street, and many who have maintained an exceptionally optimistic tone for the past year, began to change their opinions.

There were many rumors rife regarding the curbing of speculative trading, and it was mentioned that many prominent bankers heartily favored such a move.

The oils exhibited a very thin market, and the majority of them sagged slightly under selling pressure. H. F. Wilcox Oil & Gas, which last week made sharp advances running from 21 to 29¼, lost much of its advances and sold at 25.

Twenty Representative Stocks

The Oil and Gas Journal weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

January 26	57.44
February 2	57.55
February 9	55.28

Union Oil

Union Oil Co. profits from operations in 1928 were $25,917,423.70.

Profits from operations, 1928	$25,917,423.70
Less general expense	3,552,887.61
Interest charges	548,652.37
Total	$21,815,883.72
Depreciation, depl. and drilling expenditures	10,713,948.36
Net profit	$11,101,935.36

Earnings per share before depreciation were $5.74 compared with $5.50 in 1927. Net $2.92 and $2.65, respectively. Sales amounted to $85,367,770.71, an increase of $5,094,443.28, and an increase of 67,500,000 units.

Capital expenditures were $17,881,369.24, current assets, $56,793,088.02; current liabilities, $11,465,631.85.

Sun Oil

Report of Sun Oil Co. and subsidiaries for year ended December 31, 1928, shows net profit of $5,008,027 after interest, depreciation, depletion, federal taxes, etc., equivalent under 6 per cent dividend requirements on preferred stock, to $3.92 a share earned on 1,200,473 no-par shares of common, which were outstanding practically the entire year. This compares with $2,791,057, or $2.20 a share, on 1,197,934 common shares in 1927.

Income account for year 1928 compares as follows:

	1928	1927
Gross	$64,288,288	$48,716,819
Exp., etc.	55,371,113	*43,370,851
Balance	$8,917,175	$5,345,968
Other inc.	179,136	834,381
Total inc.	$9,096,311	$6,180,349
Interest	538,909	534,356
Depr. and depl.	3,097,544	2,854,936
Fed. tax.	451,831	.....
Net profit	$5,008,027	$2,791,057

*Includes federal taxes.

Humble Oil & Refining

An increase in net profits of $11,809,236.29 was made by the Humble Oil & Refining Co. during the year 1928, according to a statement issued by W. S. Farish, president of the Humble Oil & Refining Co. at the annual meeting of stockholders. Total net earnings for the year were $18,924,360.87, against $7,115,124.58 for 1927.

This report was in contrast to the one made at the annual meeting a year ago in which a decrease in net earnings for 1927 was reflected. Mr. Farish's statement pointed out that the earnings during 1928 represented an income of 6.9 per cent on the investment as against 3.5 per cent during 1927.

Mr. Farish also stated:

"We have carried on the business without adding an appreciable quantity of oil to storage. In fact, at the end of the year we had only about 300,000 bbls. of oil more than at the beginning. In the producing department, the company has under way the development of three oil fields that are of considerable promise, in which fields we think we own or control all of the acreage that will be productive."

The prosperity during the year was attributed by Mr. Farish to the conservation exhibited on the part of the refining branch in not overproducing the markets. Mr. Farish also stressed the point that whatever prosperity comes to the industry during 1929 must come from co-operation to prevent the bringing of unnecessary production on top of the ground and the unnecessary manufacture of quantities of gasoline not needed.

All directors of the company were re-elected at the meeting.

Imperial Oil

Imperial Oil, Ltd., declared an extra dividend of 25 cents and regular quartely dividend of 25 cents, both payable March 1 to stock of record February 15. Previously company has paid 12½ cents extra quarterly.

Standard of California

Standard Oil Co. of California has declared regular dividend of 62½ cents a share, payable on March 15 to stockholders of record February 18.

S. O. of Nebraska

Standard Oil Co. of Nebraska has declared an extra dividend of 25 cents and regular quarterly dividend of 62½ cents, both payable March 20 to stock of record February 25. Three months ago 50 cents extra was paid and six months ago extra dividend was 25 cents.

Rio Grande Oil

As a result of reappraisal of properties of Rio Grande Oil Co. of Texas, operating subsidiary of Rio Grande Oil Co. of Delaware, the latter has increased valuation of investment in its subsidiary from $3,000,000 at which the stock was held December 31, 1927, to $33,000,000 as of October 31, 1928. Consolidated balance sheet, including Rio Grande of Texas and subsidiary companies as of October 31, 1928, shows net value of all properties $38,508,149 after depreciation, compared with original cost $8,125,243.

Gilmore Consolidated

Terms to be offered minority interests in companies to comprise the new Gilmore Consolidated Oil Co. are likely to include an alternative cash proposition along with terms for exchange of stocks. The consolidation includes Bolsa Chica Oil Corp., Gilmore Oil and E. J. Miley Oil Co.

OIL BONDS ON THE NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members New York Stock Exchange Kennedy Bldg., Tulsa, Okla.

Amount outstanding	Company—	Date	Pct.	Int.	For week ended Feb. 8— Sales	High	Low	Close
.....	Atlantic Refining Co.	July 1937	5	J&J	15,000	101	100	100⅛
18,864,500	Barnsdall Oil with war.	Dec. 1940	6	J&D	No sales.			
6,000,000	Barnsdall Oil without war..	Dec. 1940	6	J&D	184,000	100	99¾	99⅞
11,400,000	California Pet. conv. deb. ..	Nov. 1938	5½	M&N	25,000	102⅝	102½	102⅝
7,400,000	California Pet. conv. deb. ..	Feb. 1939	5	F&A	62,000	101	100	100
.....	General Petroleum	Aug. 1940	5	F&A	13,000	101½	100⅛	101⅛
25,000,000	Humble O. & R. deb.	July 1932	5½	J&J	51,000	101⅝	101⅜	101⅜
24,239,000	Humble O. & R. deb.	Apr. 1937	5	A&O	65,000	100	99⅛	100
10,103,000	Mid-Cont. Pet. Corp.	Mar. 1940	6½	M&S	5,000	104½	104	104½
3,745,000	Pan-American Pet. & T. ...	Aug. 1930	7	F&A	1,000	104½	105⅛	104½
10,161,900	Pan-American Pet. & T. ...	Nov. 1934	6	M&N	2,000	103¾	103	103
40,000,000	Phillips Pet.	June 1939	5½	J&D	48,000	92½	91¾	92
.....	Pierce Oil deb.	June 1931	8	J&D	No sales.			
.....	P. & R. Corp. without war..	June 1931	8	J&D	No sales.			
.....	Producers & Refiners Corp..	June 1931	8	J&D	1,000	111¾	111¾	111¾
20,000,000	Pure Oil	Aug. 1937	5½	F&A	70,000	99⅛	98⅛	98⅛
30,000,000	Shell Pipe Line Co.	Nov. 1952	5	M&N	83,000	96	95⅛	95⅛
50,000,000	Shell Union Oil Co.	May 1947	5	M&N	112,000	96⅞	96¼	96⅛
2,431,500	Simms Pet. Co.	Nov. 1929	6	M&N	No sales.			
44,816,500	Sinclair Co. Oil Co. A	Mar. 1937	7	M&S	241,000	103½	102¼	103
23,086,500	Sinclair Co. Oil Co. B	Mar. 1938	6½	J&D	48,000	101	100	100⅛
20,000,000	Sinclair Co. Oil Co. D	Sept. 1930	6	M&S	83,000	99⅜	99⅛	99⅛
.....	Sinclair Cr. Oil Pur. Co. A..	Jan. 1938	5½	J&J	70,000	97¼	96⅜	97
.....	Sinclair Pipe Line Co.	Oct. 1942	5	A&O	57,000	95	93⅛	95
15,000,000	Skelly Oil Co.	Mar. 1939	5½	M&S	18,000	93¾	92¼	92½
.....	Standard Oil of N. J.	Dec. 1946	5	F&A	68,000	102⅞	102	102
.....	Standard Oil of N. Y.	Dec. 1951	4½	J&D	67,000	96⅞	95⅜	96⅛
.....	Superior Oil Co.	Feb. 1929	7	F&A	No sales.			
.....	Union Oil of Calif.	Jan. 1931	5	J&J	No sales.			
8,934,500	Union Oil of Cal. 20 yr. A...	May 1942	6	F&A	11,000	109	108⅞	108⅞
9,419,000	Union Oil of Cal. series C ..	Feb. 1935	5	A&O	19,000	99	98⅛	98⅛
4,870,000	White Eagle Oil & Ref.	Mar. 1937	5½	M&S	52,000	101⅝	99⅞	99⅞

INDEPENDENT OILS ON THE NEW YORK CURB

Quotation Compiled by Francis, Bro. & Co., Kennedy Building, Tulsa, Okla.
Members New York Curb Market

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	For week ended February 8— Sales	Open	High	Low	Last	Change
$6.75	.45	2⅞	.55	1½	.53	$5	Amer. Con. Oilfields	12,500	64	65	60	62	+ 1
..	..	7½	2¾	9½	3⅛	N.P.	Amer. Maracaibo	18,300	7⅜	7½	6⅝	6⅝	— ⅝
..	..	2¾	1	4½	2¼	$10	Argo Oil	1,400	2½	2½	2½	2½	....
..	..	..	..	..	..	..	Arkansas Natural Gas						
85¼	60	40	20½	55	32¾	N.P.	British American	100	56	56	56	56	+ 3
28⅜	9¼	28¼	15½	4½	3⅞	25c	Carib. Syndicate (new)	800	3⅜	3½	3¼	3¼	— ⅛
..	..	58¾	40¼	90⅞	54	$20	Cities Service	85,400	91⅜	95¼	91⅝	95¼	+ 3½
..	..	95⅜	87	103½	94½	100	Cities Service, pfd.	1,800	96⅝	97½	96⅜	97¼	....
..	..	8⅞	7⅜	9⅝	8⅞	10	Cities Service, pfd. B	400	9	9⅛	9	9	....
3½	1¾	3⅞	1⅛	3¼	76	1	Colombia Syndicate	8,200	1⅜	1½	1⅜	1⅜	— ⅛
..	..	9¾	6⅜	8⅞	6¼	10	Consolidated Royal	1,800	8¾	8½	8	8	— ¼
16	10	14⅞	9½	17½	9½	N.P.	Creole Syndicate	14,200	9¾	10	9¼	9½	— ½
..	..	3	.50	3¼	.76	N.P.	Crown Central	1,300	1¼	1⅜	1⅛	1⅜	+ ⅛
7⅞	6¾	12	4	33½	3¼	N.P.	Darby Petroleum	3,600	25⅜	25⅜	24	24	— 1⅜
..	..	2½	74	2¼	1	N.P.	Derby Oil & Refining	100	3⅜	3½	3⅜	3⅜	....
..	..	16¾	4	21⅛	7½	N.P.	Derby Oil & Refining, pfd.	200	25½	25½	25	25	— 2½
..	..	2	.40	.53	.15	N.P.	Gilliland ctfs.	No sales.					
98	92	118	86¼	165	101⅛	$25	Gulf Oil Corp.	6,600	151⅛	153¾	145	145	— 6
$3.00	.83	21½	.80	3⅜	1	5	Intercontinental Pet.	22,400	2	2¼	1⅞	1⅞	— ⅛
..	..	2¼	1⅛	3	1¼	N.P.	Kirby Petroleum	2,600	2¼	2⅝	1⅞	1⅞	— ⅜
12¼	5¾	10⅞	5⅛	9⅜	5⅛	25	Leonard Oil & Dev.	2,300	5⅛	5⅛	5	5	....
27	20	27½	20	43⅞	20	N.P.	Lion Oil & Refining	1,800	32	32	30	30	— 2
46	30	59⅜	37	69⅛	48⅛	$25	Lone Star Gas	2,800	74⅛	74⅞	73	73⅜	+ ⅛
2⅞	1	2⅞	.80	1⅞	.50	1	Magdalena Syndicate	8,000	79	85	72	80	....
34	12½	52	12	48½	32	N.P.	Margay Oil	100	33	33	33	33	— 3
8	5½	12⅛	5	8	2¾	N.P.	Mexico-Ohio Oil	1,000	5½	5½	5	5	— ½
1¾	1⅛	1½	1	1⅜	.76	$1	Mountain & Gulf	3,000	1⅜	1½	1¼	1¼	— ⅛
26	23	29¼	22¾	28⅞	19½	10	Mountain Producers	2,400	27	20	19	20	+ ⅜
6⅝	5	5⅞	4⅝	5⅝	4¼	5	New Bradford	1,200	4½	4⅝	4⅜	4⅜	— ⅛
..	..	16	9¼	11⅞	7½	1	New Mex. & Ariz.	900	7⅝	7⅝	7½	7½	....
..	..	12¾	9½	14¼	8½	N.P.	North Central Texas	800	10¾	11	10⅜	10⅞	— ⅛
10⅛	5⅞	9⅜	3¼	6	2⅛	N.P.	Pandem	800	2	2⅛	2	2	....
12¼	11¾	12⅛	7	15⅝	8½	N.P.	Pantepec Oil	3,900	8½	8⅞	8¼	8¾	....
22¾	12	13½	5⅛	7¾	4⅞	N.P.	Pennok Oil	5,000	6¼	6¼	6¼	6¼	— ⅛
17	8½	24⅜	7	18	4⅞	25	Red Bank Oil	800	12¼	13	12	12	....
30¼	12	15½	3½	12⅞	4⅛	N.P.	Reiter-Foster	1,800	5¼	5½	5	5	....
7	4½	7	4½	12	4⅛	N.P.	Ryan Consolidated	700	9	9	8	8¼	— 1⅜
10	7⅛	8	5¼	7¼	5½	$10	Salt Creek Cons.	600	5½	5½	5½	5½	....
35	24⅛	35½	27¼	35	23⅛	10	Salt Creek Prod.	6,300	23½	24⅝	2⅜	23⅞	+ ⅝
6⅞	1¼	7	1¼	3½	1	5	Savoy Oil	100	1⅜	1⅜	1⅜	1⅜	....
27	7⅝	26½	17	22⅞	13	10	Tidal Osage	400	14	14⅜	13½	13½	— ⅜
25¾	7⅝	23¾	15	21¼	13⅛	10	Tidal Osage, nonvoting	1,100	11⅛	13⅝	11	11¼	+ ⅛
92	63½	92	63½	93¾	75	100	Transcontinental, pfd.	100	83	83	83	83	— 2½
8	4½	7⅜	4¼	9⅛	4¾	5	Venezuelan Petrol	3,100	5¼	5¼	5	5	— ⅛
8⅛	5½	8	4¾	8¼	4⅞	$1	Woodley Petroleum	4,300	7⅝	8⅜	7⅛	7¼	....
6½	6	6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	1,800	4	4½	4	4	— ⅛

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of New York Stock Exchange, Kennedy Building, Tulsa, Okla.

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	Listed capital	Par value	Stocks—	Div. rate	Last paid	For week ended February 8 Sales	Open	High	Low	Last	Change
32⅞	24¼	37⅝	27⅝	43⅞	27½ (sh)	922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 28	9,800	34½	35⅛	32	32	— 2
74	39⅞	82½	35⅛	85	51¼ (sh)	209,180	N.P.	American Republics Corp.	.....	.....	4,600	55⅞	56	48¼	50	— ⅝
60	44¾	50¼	35	53⅜	37½	$57,260,300	$25	Associated Oil	50cQ	Dec. 31, 28	380	46	46	45⅛	46	....
128⅜	97	131⅜	104	66⅜	50	50,000,000	25	Atlantic Refining	25cQ	Dec. 15, 28	81,000	61⅞	61	55⅛	55⅞	— 5⅛
33½	23½	35½	20¾	53	20	35,194,000	25	Barnsdall Corp.	50cQ	Feb. 5, 29	110,100	45⅛	45⅞	40½	40⅝	— 5⅛
94¼	50	96¾	65	94⅞	68	20,785,400	100	General Asphalt	.....	.....	7,900	74	75	70¼	70⅜	— 3⅝
72	50¼	175¾	60⅛	167	79	25,000,000	100	Houston Oil	.....	.....	3,400	....	93	83	83	— 5
34	19⅝	32¾	17⅝	38⅜	21¾ (sh)	959,457	N.P.	Independent Oil & Gas	50cQ	Jan. 31, 29	22,700	31	32⅛	30½	30½	— 1
12¾	7½	12⅛	7⅝	39⅝	9	8,203,080	$10	Indian Refining	.....	May 31, 24	36,600	36⅞	36⅞	32	32¼	— 3¾
25⅞	16½	37¾	20½	39⅛	27⅜ (sh)	3,992,122	N.P.	Lago Oil & Transport	.....	May 1, 27	2,500	28½	29	27½	27½	— 1½
19⅞	12	18⅛	10	19¾	9⅜ (sh)	1,237,078	N.P.	Louisiana Oil Refining	.....	.....	15,500	15⅝	15½	13⅞	14	— 1½
28	16½	22⅜	12	25½	12½ (sh)	330,000	N.P.	Maracaibo Oil	.....	.....	1,100	15	15	13½	14	— 1
63⅜	49¼	58½	31	49¾	33 (sh)	2,316,692	N.P.	Marland Oil Co.	.....	Mar. 31, 27	43,700	39⅞	40⅜	36⅝	37¼	— 3⅛
13¾	6	9¼	3	73	4⅝ (sh)	945,939	N.P.	Mexican Seaboard	.....	Dec. 15, 20	63,700	53	53	43	43½	— 9½
37	20½	39⅜	25½	44½	25⅛ (sh)	1,357,461	N.P.	Mid-Continent Petroleum	50cQ	Feb. 15, 29	32,200	33	33¾	31⅛	31½	— 1⅝
104¼	90	105	97	120½	103¼	$6,718,000	$100	Mid-Continent Petroleum pfd.	$1.75Q	Sept. 1, 28	200	....	120⅝	120½	120½	— ⅛
2½	½	3¾	1⅝	7⅜	2⅜	24,298,850	10	Middle States	.....	July 1, 23	15,400	4	4¼	4	4	— ¼
76½	56⅛	65⅞	40⅛	54⅞	38¼	$48,807,400	$50	Pan American P. & T.	.....	Oct. 20, 27	2,200	43½	43½	41½	42	— 1½
78⅝	56⅞	66⅜	40¼	58⅞	37¾	121,097,900	50	Pan American P. & T. B	.....	Nov. 15, 24	35,600	43⅜	45	41⅝	41⅝	— 3¼
46	30	37⅞	16¾	28⅜	15½ (sh)	400,000	N.P.	Pan American Western B	.....	Jan. 30, 27	.....	15½	....	....	....	....
32	4½	18⅞	8	21¾	11½ (sh)	198,770	N.P.	Panhandle P. & R.	.....	.....	4,900	10½	11	9⅝	9¾	— ⅝
99⅝	51	83	54	108	70	$2,935,200	$100	Panhandle P. & R. Pfd.	.....	July 2, 23						
57⅜	40	60¼	36¼	53⅞	35¼ (sh)	2,406,796	N.P.	Phillips Petroleum	37½cQ	Jan. 2, 29	19,100	39½	40⅛	37¾	38	— 2
....	....	1⅛	½	5¼	½	$29,622,925	$25	Pierce Oil Corp.	.....	.....	11,200	2½	2⅝	2¼	2¼	— ¼
7	2¼	5½	2½	7	3½ (sh)	2,500,000	N.P.	Pierce Petroleum	.....	.....	9,100	5	5⅛	4¾	4¾	— ¼
60¼	48	55½	45⅝	68	46	60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	49,800	60	62½	59	59¼	— 1⅛
20¾	11	33⅞	16¾	29⅞	16	$37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	1,100	20⅞	21⅜	19¾	19¾	— 1¼
41¾	30¾	50	36⅞	49⅝	41	2,845,350	50	Producers & Refiners pfd.	.....	May 1, 25	30	....	40⅛	40	40	....
31	25¼	33½	25	31⅝	19	75,959,350	25	Pure Oil Co.	25cQ	Dec. 1, 28	29,100	25	25⅞	23¾	23¾	— 1
27½	22	28⅝	25⅜	56	23	47,025,000	$25	Richfield Oil	.....	Nov. 15, 28	19,100	45¼	44⅞	41½	42⅞	— 2⅝
57⅜	47⅜	54½	44¼	64	44⅝ (sh)	611,303	13.40	Royal Dutch, N. Y. shares	50cQ	Jan. 10, 29	6,100	51½	41⅜	50¼	50¾	— ¾
48⅝	40½	47⅞	41⅜	57½	40⅝ (sh)	£30,000,000	£1	Shell Transport & T.	$1.455	July 23, 28						
31	24	31¾	24⅝	39¼	23¼ (sh)	20,000,000	N.P.	Shell Union Oil	35cQ	Dec. 31, 28	42,100	27⅜	27½	26	26⅜	— 1⅜
28⅜	15⅛	26⅜	14¼	27¼	18⅛	$8,357,000	$10	Simms Petroleum	10cQ	Dec. 15, 28	6,100	20⅞	21	19⅝	19⅜	— 1
24⅞	16¾	22⅜	15	46¾	17⅜ (sh)	4,501,915	N.P.	Sinclair Consolidated	.....	.....	212,100	39½	40	36	36¾	— 2½
99½	90	104½	97	110	102½	$16,604,600	$100	Sinclair Consolidated pfd.	$2Q	Nov. 15, 28	400	....	109⅞	109¾	109¾	+ 1⅝
37⅛	26⅝	37⅜	24⅛	42⅝	25	27,396,590	25	Skelly Oil Co.	50cQ	Dec. 15, 28	29,100	36½	35⅝	33⅜	34¼	— 1¾
63⅝	51½	60¾	50⅜	80	53 (sh)	12,594,098	N.P.	Standard Oil of California	65½cQ	Dec. 15, 28	29,100	66⅞	68⅞	65⅝	68¼	— ⅛
46⅜	37½	41⅜	35⅛	59⅜	37¾	$611,120,700	$25	Standard Oil of New Jersey	25cQ*	Dec. 15, 28	71,100	50½	50¼	48⅜	48⅝	— 1⅞
47¼	30⅜	34⅛	29¾	44¼	28¾	427,973,275	25	Standard Oil of New York	40cQ	Dec. 15, 28	112,100	41¾	41½	39⅞	40	— 1½
41⅝	30⅛	34⅞	30	77	31½ (sh)	1,206,073	N.P.	Sun Oil	25cQ	Dec. 15, 28	4,900	60	61	58	58	— 3
5¼	1	6½	3⅛	14¼	2½ (sh)	1,267,000	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	31,100	8⅜	8⅞	7½	7⅝	— 1⅛
58	48	58	45	74¾	50	$211,076,650	$25	The Texas Corporation	75cQ	Jan. 1, 29	52,100	61¼	61¾	59	59⅛	— 2⅜
19½	12	18⅞	12	26⅝	12⅛	8,380,340	10	Texas Pacific Coal & Oil	.....	Jan. 3, 28	61,100	18¼	20¼	17⅜	17⅜	— 1
39¼	27	29⅛	19	41½	19⅝ (sh)	2,168,410	N.P.	Tide Water Oil Co.	20cQ	Dec. 15, 28	2,600	30⅛	30½	27⅛	27⅛	— 2⅞
103	87¼	90⅛	85	100⅛	86	$20,705,200	$100	Tide Water Oil Co. 5% pfd.	$1.25Q	Nov. 15, 28	600	93¼	92¾	92	92	— 1¼
27	20⅞	19⅛	15⅜	25	14¾ (sh)	4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	9,200	19	19½	17½	17⅞	— 1⅛
5½	3	10⅜	3¾	14¾	7¼ (sh)	3,742,029	N.P.	Transcontinental Oil	.....	.....	31,400	10¼	10½	9½	9½	— ⅞
58⅜	37¼	56½	39⅝	58	42¾	$94,798,100	$25	Union Oil of California	50cQ	Nov. 10, 28	15,600	50¾	50⅞	49⅜	49⅜	— ⅝
120⅜	84¼	127½	94	128⅛	110	31,061,200	100	Union Tank Car Co.	$1.25Q	Dec. 1, 28	4,100	....	137	130	137	+ 3
30⅛	23½	34½	24½	44⅞	26 (sh)	356,000	N.P.	Warner Quinlan	50cQ	Jan. 2, 29	8,800	38	38⅜	35⅝	35⅝	— 2⅛
29¾	25⅛	27½	20	38	20⅛ (sh)	490,000	N.P.	White Eagle Oil & Refining	50cQ	Jan. 20, 29	8,200	32⅜	32½	30½	32¼	— ⅛
								Wilcox Oil & Gas	.....	.....	79,600	25⅞	29¾	25	25	— 1½

*Also extras. †Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

21	16	21⅝	17⅞	22⅜	14⅞	£4,126,460	£1	Anglo-American Oil	.....	June 6, 28	5,600	15⅜	16⅜	15¼	16	+ ¾
....	....	3¾	¾	5	1¼ (sh)	500,000	N.P.	Atlantic Lobos	.....	.....	400	2⅛	2⅛	2	2⅛	.....
76	65	69	50	56½	44½	1,000,000	25	Borne Scrymser	$18.A.	Oct. 15, 28	150	45⅜	46	45⅜	46	+ 2½
59½	42	60	45	76	53	10,000,000	50	Buckeye Pipe Line	$1Q	Dec. 15, 28	400	71	70	70	70	— 1
82½	65	126	76½	161	117½	3,000,000	25	Chesebrough Mfg.	$1Q	Dec. 28, 28	100	143	142	142	142	— 1
25⅞	17½	22⅝	16¼	23	16	36,057,840	10	Continental Oil	.....	Dec. 15, 27	.....	22⅛	..	..	..	.....
137	102	137	89	114	67	1,500,000	50	Cumberland Pipe Line	$1A	Dec. 15, 28	550	72¾	74	70	72¾	+ 5¾
63¾	43	68½	47	88	64⅛	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 28	50	70¼	69	69	69	— 1¼
32½	9⅞	13½	3½	13	4¼	16,000,000	100	Galena Signal Oil	.....	June 30, 25	No sales.					
68½	52	68½	54	114¾	59¼	73,117,577	25	Humble Oil & Refining	30cQ*	Jan. 1, 29	32,400	94	94	91½	92⅛	— 1⅜
144½	125½	182	123¾	290½	176½	20,000,000	100	Illinois Pipe Line	10%S.A.	Dec. 15, 28	400	304½	305	299	299	— 5½
....	....	64¾	37¾	104	56¾ (sh)	6,458,267	N.P.	Imperial of Canada	25cQ	Dec. 1, 28	6,800	97⅞	97⅜	94	94	— 3½
72½	58	94½	61	91⅞	74⅜	$5,000,000	$50	Indiana Pipe Line	$1Q	Feb. 15, 29	1,400	87	87	82	82	— 5
35½	28¾	39	28¼	55	35 (sh)	7,123,444	N.P.	International Petroleum	25c	Nov. 30, 28	48,500	60	60½	53¾	54¾	— 5½
20¾	12½	24	13½	32⅜	19⅜	$6,363,350	12.50	National Transit Co.	25c	Dec. 15, 28	5,100	24	25⅝	24	24½	+ ⅞
51½	27¼	44½	31¼	75	38½	5,000,000	100	New York Transit	.....	July 15, 26	200	81	81	80	80	— 1
80½	64	100	70	69	56½	2,000,000	50	Northern Pipe Line	$38.A.	Jan. 2, 29	100	60	60	60	60	— 2½
67¾	55¾	67⅞	52	84	58½	60,000,000	25	Ohio Oil Co.	50cQ*	Dec. 15, 28	3,400	68⅜	69½	65	65⅜	— 2⅛
24¾	15	39	12	84	28	10,000,000	25	Penn Mex. Fuel	$1.25	Dec. 15, 28	700	43⅝	41⅞	36	36	— 7⅜
								Prairie Pipe	.....	.....	12,600	56	57¾	55½	56⅞	+ 1⅜
220	84½	201½	175½	220	167	4,000,000	100	Solar Refining	5A.	Dec. 20, 28	200	50	50	50	50	.....
74½	61½	27¼	15½	19	15	1,000,000	10	Southern Pipe Line	$2	Dec. 1, 27	No sales.					
50	34½	41½	35	71⅞	36¾	2,000,000	25	South Penn Oil	50cQ	Dec. 31, 28	1,000	65	65½	63	64⅝	— ⅞
56	47½	83	55½	102	70	3,500,000	100	Southwest Pa. Pipe Lines	$1Q	Oct. 1, 28	150	70	70	68¼	68¼	.....
70½	60½	81½	64⅝	95⅞	70⅞	228,415,463	25	Standard Oil of Indiana	62½cQ	Dec. 15, 28	281,700	98⅞	102	91½	92¾	— ¼
36½	16½	20⅞	14⅝	27¾	15	8,000,000	25	Standard Oil of Kansas	.....	June 16, 24	1,000	19½	19⅞	19⅛	19⅛	— ⅜
134⅜	108	130	111½	179¾	122¼	17,012,559	10	Standard Oil of Kentucky	$1Q	Dec. 31, 28	13,700	42⅞	44⅜	40	40⅜	— 2⅝
51⅛	42	49½	40	54⅞	39⅞	4,559,850	25	Standard Oil of Nebraska	63cQ	Dec. 20, 28	700	46¾	49⅛	45½	47⅞	+ 1⅛
372	288	87½	72	134	71	14,000,000	25	Standard Oil of Ohio	62½cQ	Jan. 2, 29	550	124½	121	115	115	— 9½
21	15	21	14½	23½	16	861,000	25	Swan Finch Co.	.....	Nov. 1, 19	No sales.					
109⅜	90¼	....	....	111	72	125,619,000	25	Vacuum Oil	75cQ	Dec. 20, 28	10,300	122¼	123	117⅛	117¾	— 5¼

*Also extras.

Vacuum Oil

By raising the regular dividend to a $4 annual basis, from $3 paid previously, Vacuum's annual cash dividend outlay is raised to about $20,100,000 on its 5,024,764 shares of $25 par. This is without allowing for any special distribution at the year-end, a usual procedure for Vacuum being to declare $1 a share extra. If $1 a share extra is declared it would mean dividend outlay of more than $25,000,000 this year.

Vacuum's record on dividends has been unusual. In 1922 dividend of $16 a share on 150,000 shares amounted to $2,400,000. Late that year a 300 per cent stock dividend was paid and par reduced to $25, resulting in a 16-for-1 exchange and bringing shares issued to 2,400,000.

In 1923 cash dividend of $2.50 was paid amounting to $6,142,840; next year the dividend was $3.75 a share, or $9,271,155, while in 1925, 1926 and 1927 dividends were $5 a share a year, the latter year representing outlay of $12,528,040. In 1928 one dividend of $1 a share was paid on 2,512,383 shares and then a 100 per cent stock dividend increasing issued capital to 5,024,764 shares. On this latter three quarterly payments of 75 cents each and an extra of $1 a share were paid in 1928. These made aggregate cash dividends for last year of $20,099,057, more than eight times 1922 cash payments and more than twice those of 1927.

British Controlled Oilfields

British Controlled Oilfields, Ltd., reports for year ended July 31, 1928, gross

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FIFTEEN MINUTES WAS ALL THAT HE NEEDED

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in Oklahoma he would go to the Ohio oil fields till things picked up in the Mid-Continent area. In 1921 Mr. Dwigans entered the service of the Twin State Oil Co., and he has been with that company every since. At 76 he still is an active driller. He resides with his only child, Miss Jetta Dwigans, in Tulsa. Mrs. Dwigans, whose maiden name was Susan Kinnear, died in 1925.

In the 58 years since he began work in the oil fields John Dwigans has seen revolutionary changes in operating methods and in equipment. He regards the rotary as a marvelous machine, but he has remained a cable tool driller. The power unit in common use in 1870 was an engine bolted to the top of the boiler. One of these boiler-and-engine combinations provided power for the first well drilled by Mr. Dwigans. One of them figured, too, in an accident which left "Bub" Grant, of Shaffer Run, with only one arm. "Bub's" real name was Ulysses, but of course nobody called him that. The Grants were neighbors of the Dwigans family and John remembers the episode well.

A Boy, a Rope, a Flywheel, and—

"Bub," then about 10 years old, had made a noose at each end of a stout piece of rope. One he slipped over the projecting end of the flywheel shaft of the engine. The other he looped about his right wrist. Just as the head of oil was pumped off and the engine, without any fluid to lift, began running wild, both nooses tightened and the boy was whirled about the shaft, his feet hitting the floor of the engine house each time he was swung around. He yelled in terror and pain. Members of his family and neighbors ran toward the engine house. Before they got there the rope had broken, releasing the whirling boy. Instead of fainting, young "Bub," with an arm mangled and pulled from its socket, stopped the engine before he emerged from the engine house to meet his mother, who began to cry.

"Aw, don't cry," said "Bub," "I ain't hurt."

A doctor, summoned from Oil City, amputated the arm at the shoulder. "Bub" did not permit the loss of an arm to interfere seriously with his enjoyment of life. He developed into a sturdy man and recently was working on a farm near Seneca, south of Oil City. His father, L. D. Grant, is still living in Oil City.

Mr. Dwigans himself had completed almost 57 years of life in the oil fields before he had an accident more important than a sliver in his finger or a bump such as an office worker might suffer through nodding at his desk and slipping from his revolving chair. This long record of freedom from mishaps is ascribed by his associates to personal carefulness and precaution and his insistence that men under his direction sedulously observe safety measures. In June, 1927, he was drilling a well in the Pearson Switch area, Oklahoma, when the tool dresser encountered trouble shoving slack upon the bullwheel. Mr. Dwigans took hold of the cable to help the other man, and his hand was caught between the cable and the bullwheel. The ends of two fingers were pinched off. He was obliged to remain off for three months.

PLAN TO DEPLETE SANDS QUICKLY

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as the greatest contribution to the technology of oil-field flooding.

"Various methods of applying a triangular spacing pattern in connection with a line flood are in use. The method more generally employed is that of drilling a row of water wells across the property. This allows for approximately twice as many oil wells as water wells during the initial period of field development and assures a large oil production within one or two years, depending upon the spacing of the wells, with a corresponding rapid depletion. This is a very desirable feature when a property is carrying heavy financial obligations. On several properties, as many as three rows of oil wells on each side of the water line are being pumped at the same time. Some operators, fearing that a considerable quantity of oil will be lost by flooding toward the property lines of their neighbors, have drilled a flood line along the lease boundary rather than across the center. When a co-operative agreement can be made between adjoining property owners, this method greatly reduces the initial cost, but it gives only half of the initial flood production to each operator."

The Latest Method

The method described by Mr. Torrey, which was the latest up to that writing, called for five-spot water-intake wells by means of which the oil was driven to groups of four oil wells. The 1929 method calls for five-spot oil wells into which the oil is driven by means of four water-intake wells. In a sense the two systems are the reverse of one another. In the old system a line of water wells was drilled along the center of the property and a line of oil wells in staggered formation was drilled on either side of the water-well line. No new wells were drilled until the existing ones had been "watered out," whereupon two new lines of oil wells were drilled and the old oil wells converted into water wells. In this manner it would take many years to deplete a large property. The new system calls for the drilling of the whole lease at once, or just as fast as the drilling crews can put the wells down, and calls for the development of the entire property as rapidly as the oil can be extracted.

Before the development gets under way one or more cores are taken and studied to determine the character and content of the sand and from the results of this core study the spacing of the wells is determined. The analysis of the core tells the probable oil content of the sand body so that it is possible to approximate the oil recovery per acre.

A Specimen Pattern

The accompanying diagram showing a pattern for a plat of about 14 acres illustrates the position of the intake wells and the oil wells. It shows 18 water wells and 10 oil wells. The water wells are 240 feet apart and the oil wells, while 240 feet apart, are 172 feet distant from the water wells. A pattern like this on a large property, say a mile square, would call for 484 water wells and 441 oil wells. Well spacing varies, however, and many properties will be drilled an average of two wells to the acre, counting both intake and oil wells.

Before drilling an oil well the crew drills to the ground-water horizon, which lies from a few feet to 200 feet below the surface. The water well drilled and cased, the crew drills the oil well alongside of it. The content of the water wells is pumped into a large tank on the property and from the tank the water is pumped under heavy pressure into the intake wells, which are drilled to the bottom of the oil sand. Altogether, a pressure of 1,200 pounds or more is maintained. It is aimed to pump 50 bbls. of water per day into each intake well, and the amount is carefully metered so that the operator knows at all times how much each well is taking. The tremendous pressure exerted four ways against the sand gets action very soon and already stories are told of large recovery on leases in both the Richburg and the Bradford Fields.

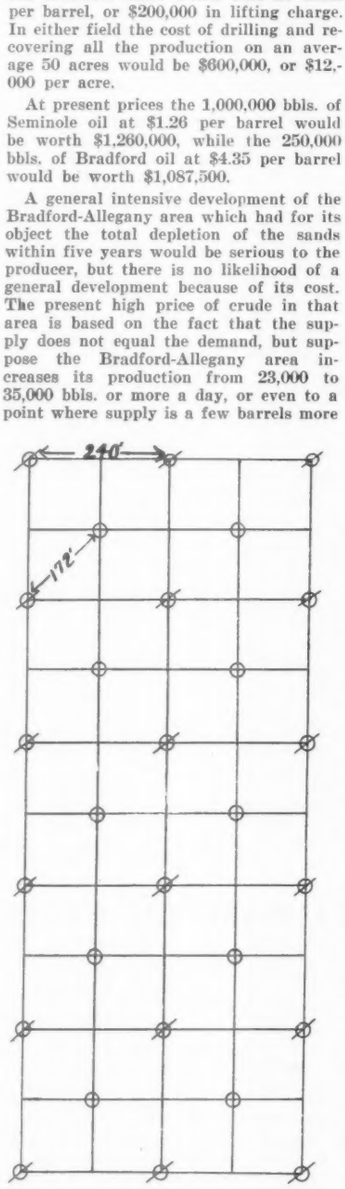
A 10-bbl. tank is placed at every oil well and frequent gauges are taken to determine the quantity of oil and of water produced in a given number of hours.

Expensive as Seminole

The newer system of operating is very expensive. It costs as much to develop a 50-acre Bradford lease, as it does a 50-acre lease in the deep Seminole Field in Oklahoma. Leaving out the bonus price, or cost of the lease, and figuring only on the cost of drilling, 100 wells at $3,500 each cost $350,000. In Seminole a 50-acre lease would require the drilling of five wells at $65,000 each and an air-gas lift installation at $15,000, or $80,000 per well, or $400,000 in all. To recover 250,000 bbls. of oil from the Bradford lease would cost $1 per barrel, or another $250,000. To recover 1,000,000 bbls. from the Seminole lease would cost 20 cents per barrel, or $200,000 in lifting charge. In either field the cost of drilling and recovering all the production on an average 50 acres would be $600,000, or $12,000 per acre.

At present prices the 1,000,000 bbls. of Seminole oil at $1.26 per barrel would be worth $1,260,000, while the 250,000 bbls. of Bradford oil at $4.35 per barrel would be worth $1,087,500.

A general intensive development of the Bradford-Allegany area which had for its object the total depletion of the sands within five years would be serious to the producer, but there is no likelihood of a general development because of its cost. The present high price of crude in that area is based on the fact that the supply does not equal the demand, but suppose the Bradford-Allegany area increases its production from 23,000 to 35,000 bbls. or more a day, or even to a point where supply is a few barrels more



Specimen well spacing pattern used in the Bradford-Allegany Field under the latest system of flooding. The oil wells are indicated by a circle and the water wells by a circle bisected by a line. Well spacing is determined by the result of a study of sand core. On some properties two wells to the acre will be drilled.

than the demand, how long would the high price maintain? Theoretically it would be possible to produce 35,000 bbls. a day from the Bradford Field alone. It is simply a question of the number of wells and the method of flooding, but if it cost $12,000 per acre to drill and produce under the new system of flooding and intensive drilling it will require a constant high crude price to more than make both ends meet. It would not be possible to operate profitably in the new way under a price such as prevailed a year ago, for example. Already there are some operators in the Bradford area fearful that intensive drilling will kill the goose that is laying Bradford's golden eggs.

Not all of the crude oil purchasers in the Pennsylvania grade area are producers. Some of the refining companies, notably the Pennzoil Co., Kendall Refining Co. and Emery Manufacturing Co., have their own private crude supply in the Bradford Field, but none of them is producing enough in the field to supply refinery demands. They are all oil purchasers. The Emery Manufacturing Co. is a sister company to the Minard Run Oil Co. The Minard Run Oil Co. is one of the large owners of Bradford Field acreage and is a pioneer in the field dating back to 1875. Some of the first wells south of the city of Bradford were drilled on one or another of these Emery properties. The Minard Run Oil Co. selected a lease south of the city as the scene of its first operations under the new system of flooding wells quickly and has engaged in a large drilling campaign in that part of the field.

The South Penn Oil Co., the largest owner of acreage but not the largest producer of oil in the field—that distinction going to the Forest Oil Corp.—supplies crude to its subsidiary, the Pennzoil Oil at Oil City. Pennzoil is one of the nationally advertised 100 per cent Pennsylvania grade lubricating oils. The South Penn has been conservative in its operations in the Bradford Field because it has production in other Pennsylvania grade fields and is a large buyer of crude. Its flooding has been carried on largely as a protective measure against the encroachment of neighbors. The company is in a position to greatly increase its production any time it decides to do so. Whether or not it will depart from its policy of the past few years remains to be seen as the year progresses. It has been rumored that the company will drill 800 wells this year, but the same rumor, or others like it, have been circulated at the beginning of each year only to see the old company proceed with its usual conservative policy.

The Messer Oil Co. of Olean and the Forest Oil Corp. of Bradford are among the large operators that are adopting the new system of flooding. Both companies are well financed and are large producers with a lot of acreage in the richest parts of the two fields.

Peculiar Crude Situation

The Pennsylvania grade crude oil situation is different from any other in the industry. Too much crude is being produced in California, Oklahoma and Texas. The recently lowered prices on all "sweet" crudes produced west of the old Eastern fields and east of California was the result of this overproduction. In the old Eastern fields the situation is different. In that area about 64,000 bbls. of a particular grade of crude is available to refiners from the fields in New York, Pennsylvania, West Virginia and southeastern Ohio. In the past year the demand for the crude exceeded the production by about 5 per cent, which is enough to have sent the crude price skyward in 1928. At the beginning of 1927, with a highest posted price of $2.80, the stocks of Pennsylvania grade crude held by the pipe line companies were 3,721,106 bbls. Stocks increased to 4,225,583 bbls. by January 1, 1928, and the highest posted crude price sagged to $2.80. During 1928 there was a small but steady withdrawal from storage and the posted price went to a high for the year of $3.85. At the beginning of 1929 stocks had fallen to 2,927,781 bbls., indicating an average withdrawal through the year of about 3,546 bbls. per day, an indication that production was only about 95 per cent of the demand. That margin of 5 per cent meant much to the producer. It boosted the posted price of crude to a high of $4.15 per barrel in January of this year, or $1.30 above the price at the beginning of 1928. There is a premium of 25 cents per barrel on top of the posted price.

The small margin between supply and demand (as indicated by available statistics) could easily be wiped out by a too intensive and too rapid drilling of the Bradford and Allegany Fields. It behooves operators in that area to carefully watch their step.

BIG YIELD PER ACRE IN ST. LOUIS POOL

(Continued from Page 38)

Hunton lime. The pool is located upon part of the broad Hunton arch existing in this locality, and for a long time it was thought likely that no Wilcox sand production would be found there.

Opening of Wilcox Production

The first well of the area to find oil in the Wilcox was the Magnolia Petroleum Co.'s No. 1 Hembree, NW cor. SE, Section 19-7-5, which had an initial production of 1,000 bbls. daily. This well was offset by T. B. Slick's No. 1 Hembree on the east, and when the Slick well drilled the sand, it started flowing 9,000 bbls. daily. The scramble was started.

The Slick well was drilled in during August, 1928, and from that time to January 1, 1929, the Wilcox sand in this area has produced 13,540,450 bbls. of high grade oil. It has established at least one new record for Oklahoma, and that is the rate of recovery per acre from any one lease. The Slick Hembree lease, a long 40 acres described as the E half of the W half of the SE of Section 19-7-5, has produced 78,169 bbls. per acre during five months. This is believed to be a record considerably higher than any other lease in the Oklahoma-Kansas territory, and it may leave a mark to shoot at for some time, for the Slick lease is regarded as a phenomenal producer.

The lease is located in the heart of the heavy Wilcox sand producing region. It has had directly and diagonally, 11 wells offsetting it producing from the same horizon, and the majority of them are good wells. Immediately north of the Slick lease, a row of wells drilled to the Wilcox, found that sand barren, and were plugged back to shallower depths from which they produced oil. The edge of the Wilcox structure ends abruptly on the north line of the SE of Section 19. To the northeast, the production lightens up, and the wells have a smaller rate of flow.

Heavy Gas Pressure

There is one factor which must have played an important part in establishing the record of the Slick lease, and that is the heavy gas pressure present on the lease. This has probably been assisted by a water pressure working towards the center from the outside of the structure.

The 160 acres comprising the SE Section 19-7-5, has set an enviable record. This acreage has produced from discovery until January 1, 1929, 8,130,268 bbls. of oil, or 50,814 bbls. to the acre. The remarkable part of this land is that it is still making 34,600 bbls. of oil daily, and the decline curve is remarkably straight, showing a very light drop in output. The Independent Oil & Gas Co.'s Youts lease, a part of this land is still making 19,000 bbls. daily, while the Slick's Hembree lease is still making 11,340 bbls., and the Magnolia Petroleum Co.'s Hembree lease is producing 3,860 bbls. daily. The properties evidently are far from depleted, and while many have been expecting both the Slick and the Independent leases, to take a sudden drop in output, they have maintained an extraordinary rate of flow. Practically all of the Wilcox sand wells in this pool are flowed by means of the air-gas lift.

Next in rank to the Slick lease, is the Independent Oil & Gas Co.'s Youts lease, which is the E half of SE of Section 19-7-5. This property has produced 3,416,279 bbls. up to January 1, and is therefore credited with a production per acre of 42,703 bbls.; exceptional especially when it is still making 19,430 bbls. daily. The Magnolia Petroleum Co.'s Hembree lease, like Slick's Hembree a long forty acres, produced 1,587,216 bbls. up to the first of this year. This gives the lease a production of 39,680 bbls. to the acre, and its output has been subjected to some decrease. At present this property is producing 3,860 bbls. daily.

Three Wilcox "Pimples"

There have been three spots close to the main body of Wilcox sand production in this pool which have uncovered oil in the same horizon. The first was opened by the Mid-Continent Petroleum Corp.'s No. 1 Guinn in Section 20-7-5. When this was drilled in and had a good initial flow, it was thought likely that the production would extend all the way across from the discovery well in Section 19. Drilling proved the error of this theory, and the Mid-Continent well only found a typical Wilcox sand "pimple" so common to this part of the country. The second Wilcox pimple was found by The Texas Company and the Fuhrman Petroleum Co. on their Cherry lease, in NW NW, Section 25-7-4. This discovery started another activity which seems destined to be rather well confined to the properties marked on the accompanying map. They constitute the more recent discoveries, and while their records thus far have been good in the matter of recovery, they have not been on production long enough to offer any definite conclusions except that they look very profitable.

The Texas-Fuhrman lease was the first Wilcox lease in this region, and it produced 343,690 bbls. up to the first of this year. The first well was drilled in during November. Although this lease is in the early stages of production it has now made 8,592 bbls. per acre. It is considered likely that this operation will not find more than 230 acres productive in the Wilcox.

The third Wilcox pimple to be discovered is not shown on the accompanying map. It has only one completed well, and insufficient information is available to offer any conclusions. It is located in the NE Section 18-7-5, and was opened by T. B. Slick and the Maud Oil & Gas Co. The first well is cutting slightly by water, and this spot may be very small in area.

It has often been mentioned that the oil industry like other industries has speeded up production, and that the Seminole Field bids fair to quickly overtake the Cushing Pool in the matter of recovered oil. The St. Louis Pool especially offers an interesting comparison, and has added much interesting information which may by careful study be utilized in making estimates of future oil recoveries and also future methods of production.

TEXAS PANHANDLE

(Continued from Page 47)

Carty-A was dry and abandoned at 1,790 feet. Staley & Wynne's No. 2 Kemp & Kempner made 80 bbls. at 1,484-90 feet.

RANGER COMPLETIONS

Week Ending February 9

Brown County

Alford Oil Co.'s No. 2 Leslie made 2,000,000 feet of gas at 1,340-41 feet. Daniels & Malone's No. 1 Turner was temporarily abandoned at 390 feet. Humble Oil & Refining Co.'s No. 29 Hick was dry and abandoned at 1,217-18 feet. Prairie Oil & Gas Co.'s No. 5 Arms was dry and abandoned at 1,476 feet. Amerada Petroleum Corp.'s No. 3 Guthrie was dry and abandoned at 640 feet. J. H. Green's No. 3 Hill made 15 bbls. at 838-46 feet. H. Hutzman's No. 9 Stanley made 10 bbls. after having been shot with 5 quarts at 413-37 feet.

Callahan County

Grass Roots Oil Co.'s No. 7 Klutts made 34 bbls. at 472-78 feet. The Texas Company's No. 19 Hatchett made 2 bbls. at 362-63½ feet and was drilled to a total depth of 368 feet. Weigel and others' No. 1 Linville was dry and abandoned at 1,508 feet. Gwinnup & Bradstreet's No. 2 Morris was dry and abandoned at 2,070 feet. Continental and others' No. 1 Overall made 375 bbls. at 2,129-34 feet and was drilled to a total depth of 2,139 feet. Their No. 4 Overall made 250 bbls. at 2,118-26 feet. Midland Oil Co.'s No. 1 Curry was dry and abandoned at 1,385 feet. Roth & Faurot's No. 1 Glover was dry and abandoned at 1,727 feet.

Eastland County

Goodwin and others' No. 1 Hazzard was temporarily abandoned at 1,660 feet. Jake Hamon, Jr.'s No. 1-B Turner was dry and abandoned at 1,578 feet. Price and others' No. 2 Holcomb was temporarily abandoned at 600 feet. Root and others' No. 2 Hazel made 350 bbls. at 3,394-44 feet and was drilled to a total depth of 3,461 feet. Texas Pacific Coal & Oil Co.'s No. 3 Higginbotham-AA made 5,000,000 feet of gas and 350 bbls. oil at 3,664-85 feet.

Concho County

Duffey & Silk's No. 1 Noyes was dry and abandoned at 1,635 feet.

Shackelford County

Simms Oil Co.'s No. 4 Jones made 20 bbls. at 770-78 feet and was drilled to a total depth of 800 feet.

Stephens County

Lacy & Swenson and others' No. 1 Harrington was dry and abandoned at 3,414 feet.

CRUDE IMPORTS VS. REFINERY EXPORTS

(Continued from Page 39)

demand at refineries for gasoline in this country totaled 381,729,000 bbls., an increase of 40,585,000 bbls., or 11.9 per cent. Of this total increase 31,125,000 bbls. is accounted for by the greater domestic consumption and the remaining 9,460,000 bbls. came from foreign buyers. The domestic demand increased 10.5 per cent and the export demand 21.3 per cent.

These figures for 1928 are in contrast to those for 1927 which show that in a total increase of 36,732,000 bbls. in gasoline demand, 35,863,000 bbls. was in the domestic market and 869,000 bbls. in foreign outlets. It has been pointed out that the increase of 9,460,000 bbls. in exports during 1928 was the dominating factor in the refinery gasoline market enabling refiners generally to profit from a favorable gasoline price situation over the greater part of the year.

In this connection attention is called to the fact that the rate of increase in the domestic gasoline demand both in volume and percentagely is decreasing. The increase of 31,125,000 bbls. in 1928 compares with an increase of 35,802,000 bbls. in 1927, 38,300,000 bbls. in 1926 and 38,802,000 bbls. in 1925. This trend has continued over a long enough period to indicate that it probably will continue. This points to a saturation point in the gasoline requirements of this country. The period when the domestic demand will not increase no doubt will not be reached for several years but it is apparent that a decline in the rate of increase is important to every producer and refiner of crude oil.

Foreign consumption of gasoline according to investigators will continue to increase rapidly for an indefinite period. It will be the aim of refiners in the United States to secure enough of this increased foreign consumption to offset the smaller increases in their domestic market.

For the year 1928 gasoline exports were 14.1 per cent of total demand at refineries in the United States. Foreign crude oil runs to stills on the other hand were only 8.2 per cent of the total runs. Thus the foreign outlet for the principal product secured from crude oil far exceeded in importance the importation of raw material.

Kerosene Demand

In the case of kerosene and some of the other refinery products exports played an even more important part during 1928 than they did in the gasoline demand. The kerosene demand totaled 59,074,000 gallons in 1928. This was divided between a domestic demand of 37,008,000 bbls. and an export demand of 22,066,000 bbls. Thus the export outlet was 37.5 per cent of the total.

The significant feature in the kerosene situation lies in the fact that the kerosene domestic demand decreased 1.1 per cent during 1928. This is a continuance of a trend in which there has been a slight yearly decrease in kerosene consumption in the United States since peak period of 1925 when demand totaled 39,969,000 bbls. The export demand in 1928, however, increased 2,529,000 bbls. or 12.9 per cent. This export increase more than offset the decline in the domestic demand and gave the refiners in the United States a total increase of 2,046,000 bbls. or 3.6 per cent.

A similar situation obtained in regard to lubricating oils. The domestic demand totaled 23,137,000 bbls. in 1928, an increase of 6.7 per cent over the year previous. The export demand totaled 11,055,000 gallons, an increase of 1,279,000 gallons or 13 per cent. Approximately 33 per cent of the total lubricating oil manufactured in the United States is sold through export channels and the increase in this foreign demand has been steady in recent years.

The petroleum wax situation in 1928 was also of interest as to the relative importance of domestic and foreign outlets. Manufacturers of petroleum wax in 1928 had a very favorable price year and the government figures show that the export demand as usual was greater than the demand within the borders of United States.

Foreign buyers purchased 391,000,000 pounds of petroleum wax from refiners in the United States during 1928 while the domestic buyers bought 303,563,000 pounds. The export demand was 15 per cent greater than in 1927 and the domestic demand 7.4 per cent greater. This heavy demand enabled the refiners to reduce their stocks 40,294,000 pounds resulting in higher prices.

The export demand for fuel oil and gas oil decreased in 1928. Of the 425,863,000-bbl. demand in 1928, 44,462,000 bbls. were exported. This was a decrease of 6.6 per cent in exports.

Refinery Stocks

The gasoline supply in 1928 was practically the same as the gasoline demand. The gasoline inventories on the last day of the year were only 250,000 bbls. greater than at the start of the year an increase of less than 1 per cent. This equilibrium between supply and demand accounted for the favorable refinery market over the greater part of 1928.

Kerosene stocks increased 14.2 per cent due largely to accumulations late in the year. Fuel oil stocks continued to increase although not as rapidly as in 1927. Lubricating oil stocks increased 6.1 per cent while petroleum wax decreased 36.5 per cent.

MAIN PROVISIONS OF CODE ARE UNCHANGED

(Continued from Page 38)

Miskell, manager of the refining and marketing divisions of The Empire Oil & Refining Co.; E. T. Wilson, chairman of the board of the Continental Oil Co.; H. B. Dawes, president of the Pure Oil Co., and K. R. Kingsbury, president of the Standard Oil Co. of California.

Committee Efforts Approved

At the close of the hearing today a resolution was adopted unanimously approving the efforts of this committee, which during the past year has given generously of its time in perfecting the code.

Mr. Jones explained, as he did at the Chicago meeting of the American Petroleum Institute, that the code adopted necessarily represented many compromises in several of its provisions. He and some of the other members of the committee had favored certain rules which are not a part of the present code. Their efforts, it was explained, had been devoted toward the goal of obtaining a code which was practicable and would receive the support of the industry generally.

This spirit of compromise exemplified by Mr. Jones and the general committee apparently governed the action of most of those who were in attendance at the hearing. Many in and out of the hearing stated that there were minor changes or additions which they personally would like to have incorporated in the code but rather than run the risk of nullifying all the work that has been accomplished, they were willing to waive their objections.

It is anticipated that after the code has been finally approved by the Federal Trade Commission and is effective, changes in its provisions will be made from time to time in line with changing

conditions in the marketing branch of the industry.

The opposition to the code at the hearing today largely centered on the six rules of the first article dealing with the loaning and leasing of equipment and Paragraph Four of Rule Nine dealing with commercial accounts.

Briefly summarized, the first article recognizes that the loaning and leasing of equipment is a bad practice in marketing and seeks to prevent its further spread. The rule provides that after the code becomes effective it shall be termed an unfair practice to furnish a dealer free distributing equipment, including underground equipment, as well as pumps and other outfits above ground.

The dealer is required to pay in full for all equipment, including cost of installation, with a cash deposit of $100 for each underground unit to be installed.

However, companies which have loaned equipment installed at the time the code becomes effective can continue to operafe it. Thus the code simply prohibits the spread of the practice. Competing companies by paying for the loaned equipment can install their own equipment at a particular station.

The opposition to this rule was led by J. C. Adams, general counsel of the Transcontinental Oil Co. Mr. Adams offered a substitute for all six rules of Article One dealing with the problem of loaned and leased equipment.

Loaned Equipment

Mr. Adams, in his substitute rules, proposed in effect that the loaning and leasing evil should be ended not only in regard to new installations but also those already in operation. He proposed that within 90 days after the code became effective the present loaned or leased equipment should be sold to the dealers or returned to the owners except in cases where long-time contracts prohibited.

Although this substitute motion failed to carry it was apparent that it had considerable support among both jobbers and refiners. H. B. Fuller, representing the Ohio Petroleum Marketers Association, said his association was in favor of the abolishment of all leased or loaned equipment as soon as possible, the dealers being compelled to pay for equipment and installation costs. M. G. Peters, sales manager of the Wadhams Oil Co., one of the oldest and largest marketing companies in the Middle West, suggested a compromise, the loaned and leased equipment to be confined to pumps and other aboveground equipment.

Mr. Jones explained that it was impractical at present to force all the dealers to pay for loaned and leased equipment. He said that he personally and many others favored such a rule but the committee's investigation had convinced him that the support of some of the large companies would be lost if such a rule was adopted.

R. C. Holmes, president of The Texas Company, in discussing this provision of the code said that of the approximate 25,000,000 bbls. of gasoline distributed by his company yearly, 60 per cent was sold through dealers.

It was apparent from the questions asked by Commissioner McCullough that there was some doubt in his mind as to the legality of this rule which some claimed would work a hardship on the company without loaned equipment when forced to compete with a company which at the time the code became effective had loaned equipment already installed and would be privileged to continue it.

In this connection proponents of the rule stressed the point that the distributor without loaned equipment had the privilege of soliciting the dealers operating it and if successful in their sales talk could install their own equipment by paying the original lessor without any charge to the dealer. To clarify this particular point additions were made to the second paragraph of Rule 2.

Commercial Accounts

The only other rule which evoked wide discussion was that part of Rule 8 applying to commercial accounts. This part of the rule exempts the commercial accounts from the provisions of other parts of the rules which prohibits rebates, allowances and other similar concessions to customers. A motion to eliminate this part of the rule made by H. L. Deming of the Pierce Petroleum Corp. lost by the close vote of 65 to 58.

It was contended as to the commercial account provision that the practice of concessions to this class of trade had been abused to the extent that it would be better not to permit concessions of any kind. In connection with this discussion it was thought necessary to change the definition of what constitutes a commercial account. The new definition reads:

"Commercial accounts apply to petroleum products sold to persons, firms or corporations, using commercial vehicles in the transportation or delivery of passengers, merchandise, freight or express, for use only in such vehicles as are properly licensed by public authorities for those purposes."

The rule under this definition permits the wide use of commercial accounts in the sale of gasoline.

Most of the remaining rules were adopted unanimously. Slight changes were offered to some of the rules but they were usually voted down by large majorities.

Attitude of Jobbers

Independent jobbing interests, very few of whom belong to the American Petroleum Institute, were strongly represented at the hearing. The expected opposition from this source failed to develop. Many of those in attendance represented state jobber associations and they had been instructed to approve the provisions of the code.

Among the jobber associations which went on record as favoring the code were Wisconsin, Tennessee, Missouri, Illinois, Pennsylvania, Kansas, Minnesota, Oklahoma, North Dakota, North Carolina, Michigan and Iowa.

A large number of executives of Mid-Continent refining organizations were in attendance at the meeting. The fact that a meeting of the board of directors of the American Petroleum Institute was being held here today and tomorrow enabled executives from other parts of the country to attend.

The hearing will be a part of the record upon which the decision of the Federal Trade Commission will be based. The commission can ask for additional hearings if it sees fit. It was explained that the commission would give the widest publicity possible within the oil industry to any code of practices which secured its approval.

Text of Adams Amendment

The text of the amendment offered by Mr. Adams follows:

Transcontinental Oil Co. proposes and petitions the amendment of Article 1 by the substitution of the following Article 1, to-wit:

Rule 1. The practice of loaning, leasing or supplying pumps, tanks and other equipment for the dispensing of refined products at retail, without recapturing and obtaining payment in full of the cost to supply and installation thereof, is unsound and uneconomic and shall be discontinued forthwith upon and after the date of the approval of this code by the Federal Trade Commission.

Rule 2. Excepting only b r a n d e d equipment as provided in Rule 7 and related rules, no refiner, wholesaler, distributor and/or jobber shall do or cause to be done any of the following acts or services:

(a) Construct or supply or pay for any labor or materials used in the construction of any storage or supply tanks, pipings, fittings, driveways, sidewalks, canopys, sheds, greasing pits, buildings or other structures, upon premises not owned or leased to and exclusively possessed and used by him in the regular conduct of the business of dispensing of refined products at retail;

(b) Do any painting other than the painting of branded equipment or his standard advertising signs; make any improvements or repairs to existing structures or facilities; furnish or loan air-compressors, greasing lifts or racks, or other things of value except branded equipment under Rule 7 hereof, nor bear any part of the expense of construction work on the premises of re-sellers nor loan money to a re-seller for the same.

Rule 3. All storage and supply tanks, piping and fittings (herein called underground equipment) now owned by any refiner, wholesaler, distributor and/or jobber and now outstanding in the use or possession of lessees, licensees, or other non-owners, or purchased or delivered and installed between February 11, 1929, and the date of approval of this code by the Federal Trade Commission shall be withdrawn, reclaimed and repossessed by the lender, lessor or licensor in the following manner as the case may be:

(a) In all cases where the contract or arrangement governing such equipment is terminable by the lender, lessor or licensor at will or upon notice, such equipment shall be reclaimed by the owner within ninety (90) days after the approval of this code;

(b) In all cases where the contract or arrangement existing and in effect on February 11, 1929, and having a specified or certain term or duration but not terminable at will or within ninety (90) days, such equipment shall be reclaimed upon the expiration or earlier termination thereof; unless within the aforesaid period of ninety (90) days as to cases of terminable contracts or upon the expiration or earlier termination of fixed term contracts, said outstanding underground equipment shall be purchased by the lessee, licensee or user at the fair value thereof in place, such value to be based upon the original cost of supplying and installing the same and due allowance made for the remaining period of utility thereof.

Rule 4. Trademarked pump globes and other standard advertising devices (which shall not include appliances, devices or utensils for dispensing) may be loaned and supplied without charge in the usual course of trade.

Rule 5. Refiners, distributors, jobbers and/or wholesalers shall not pay any rentals or make any allowance for the privilege of installing pumps and tanks, or for displaying advertising on premises where refined products are sold.

Rule 6. Refiners, distributors, jobbers and/or wholesalers shall not rent from any dealer or consumer any delivery equipment, and shall not purchase from any dealer or consumers any delivery equipment for more than its actual value.

Rule 7. Such appliances, devices and utensils (herein called branded equipment) as are customarily used for dispensing refined petroleum products in the presence of the retail consumer and necessary to identify the make or brand of the product so dispensed may be marked or branded with the name, trade-mark, trade-name, brand or other identifying insignia of the refiner, wholesaler, distributor and/or jobber manufacturing, preparing and/or selling the refined product to be dispensed therefrom.

Rule 8. Branded equipment shall be deemed to include the following articles and articles of like utility and identifications, viz:

Gasoline pumps (but not the supply tank, piping or fittings to which it may be connected), gasoline buggies, lubricating oil outfits, hand pumps, grease containers and measuring utensils.

Rule 9. No branded equipment may be installed and/or delivered upon the premises of any person other than the owner of such branded equipment except under written contract of sale, lease, and/or license, which contracts shall be in conformity with the provision of Rule 10 hereof.

Rule 10. All contracts dealing with the delivery, installation, and/or use of branded equipment shall, by appropriate provision expressed therein, conform and be subject to the following limitations, viz:

(a) Contracts of sale shall be made upon the agreement, or the condition that the purchaser shall pay the full cost of acquisition, delivery, and installation of all branded equipment, (as incurred or paid by the seller under the contract) at or not to exceed sixty (60) days after delivery and installation.

(b) All contracts of lease or license shall be made upon the agreement or the condition that the purchaser of any branded equipment shall pay a monthly rental or charge for the use thereof, apportioned over the normal period of utility, and amounting in the aggregate to a sum of money equal to the total cost of acquisition, delivery and installation thereof.

(c) No branded equipment shall be repaired, on or off the premises where used, except at full cost paid by the lessee or licensee. No branded equipment shall, except for original unfitness or defect claimed within thirty (30) days of delivery or installation, be rebuilt, exchanged or replaced, except under new or supplemental written contract, requiring the extension or enlargement of the rental charge covering the rebuilt, new, or replaced branded equipment sufficient to repay or reimburse to the lessor or licensor the added cost or difference in investment incurred or laid out therein.

(d) Cost of labor of painting, or of marking of any such branded equipment with seller's name, trade-mark, trade-name or other identifying insignia need not be computed as part of the cost thereof, nor deemed to be prohibited within the meaning of this rule.

(e) A lender or lessor of such equipment shall neither extend credit to the borrower or lessee for purchase or installation costs, nor advance money to him to cover payment of privilege taxes, or any other expense in any manner related to the installation of loaned or leased equipment, or the conduct of his business as a retail dealer.

(f) All branded equipment now owned by refiner, wholesaler, distributor, and/or jobbers and outstanding in use or possession of lessees, licensee, or other non-owners, or purchased and/or delivered and installed between February 11, 1929, and the date of approval of this code by the Federal Trade Commission, shall be withdrawn, recovered and repossessed by the lender, lessor, or licensor in the following manner:

1. Within ninety (90) days after the date of approval of this code by the Federal Trade Commission in all cases where the contracts or arrangements governing the same is terminable by the lender, lessor, or licensor at will or upon notice.

2. Upon the expiration or termination of any and all contracts or arrangements, existing and in effect on February 11, 1929, having a specified or certain duration and not terminable at will or within ninety (90) days; unless within the aforesaid period of ninety (90) days as to cases of terminable contracts, or unless upon expiration or termination of fixed term contracts, said outstanding branded equipment shall be or become subject to a written contract complying with all requirements of this rule and code, or unless the user, lessee or licensee elects to purchase and pay for said branded equipment in accordance with the provisions of any existing contract; provided, however, that the term or duration of rental payments or charges shall be extended only so long as shall be required to repay or reimburse the owner, lessor, or licensee for so much of the original cost of acquisition, delivery and installation as shall correspond to the remaining life or period of utility of the branded equipment.

WATERMAN'S VIEW OF REGULATION NECESSITY

In connection with the action of the directors of the American Petroleum Institute the concluding portion of the article by Senator Charles W. Waterman of Colorado, formerly counsel to the Federal Oil Conservation Board (which appears on pages 83-121 of this issue) will be found of interest. His conclusions follow:

Superior Authority

The rapid exploitation and depletion of new fields hereafter discovered cannot be controlled or even checked under the usual conditions of private surface ownership with its resulting insatiate rivalry in acquiring title to the oil at the sur-

face, unless and until some competent superior authority assumes control and exercises sane regulatory power, in consonance with an intelligent public policy to the end that this most important waning natural resource shall not continue to be squandered by present methods of wasteful production, nor so large a portion of the supply diverted and consumed for uses which may be satisfied by coal. A shortage in production will naturally, by influencing price, compel selective use of oil products, but will not in the slightest influence the methods of production under other existing conditions.

Since the discovery of petroleum, probably more than 90 per cent of its world production has been drawn from the Upper Paleozoic and Tertiary formations. This fact is highly significant, in forecasting supply in the United States, in view of the general admission among scientific men that the presence of petroleum in commercial quantity is limited to certain definite kinds of sedimentary formation, accompanied by well-recognised necessary geological conditions, which are found more generally in the formations above specified elsewhere.

Possible Oil Areas

The possible oil areas of the United States, that is, the sedimentary formations giving any promise, have been so thoroughly explored and geologized during the last 15 years, by the best scientific men of the country, that only the wildest sort of speculation even suggests

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that there is any probability of any important new discovery of oil resource outside of areas well known and either already fully exploited or in the process of active exploitation.

All this means that if the country continues to produce and consume petroleum improvidently and extravagantly, as it has been doing and is still doing, without regard to the character or quantity of the resource or the uses to which only it should be devoted, then surely a cessation in flush production, which must come at some period, perhaps even in the near future, will force higher prices, selective use, greater economy in such use, and higher technique in oil refining.

In view of the character of the oil resource and the probabilities of continued future supply, the use of oil in competition with coal is a waste, in that it is an unnecessary depletion of a limited natural resource, but not a waste in the sense of physical destruction without utility.

Price Fixed by Surplus

So long as production exceeds essential use, the over-plus will pass to competition with coal and the price for the over-plus, fixed by coal competition, will control the level of oil prices generally. Lifting oil out of coal competition can be accomplished only by a falling supply or control and repression of production, either of which will necessarily result in striking price advance. So long as oil is on the market, much will be devoted to nonessential use even at considerably increased prices.

Preferential use cannot be established and maintained by law.

So long as natural petroleum is produced in the present quantity, or perhaps in one-half of that quantity, it is probable that substitutes cannot be profitably distilled from either shale or coal, the two most promising sources in the order named.

The magnitude of the operation and the plant investment, to say nothing of labor requirement, necessary to produce such oil substitutes in sufficient quantity even to approach real competition with natural oil under existing conditions is prohibitive, and even in the event of a serious continued decline of natural oil, it would require years and vast expenditure to put such an industry in position to supply such substitutes in sufficient quantity to keep pace with such a decline in petroleum production.

Considerably increased price is the only incentive to the production of substitutes in appreciable quantity.

There is no doubt that the effectiveness of gasoline used can be readily increased 100 per cent by the genius of experts in the construction of internal combustion engines and the treatment of motor fuel, but to supplant the millions of existing automotive engines will require much time and expense.

World Trade in Oil

Nearly all our imports of oil are crude, and nearly all our exports are refined products. The exports and imports of petroleum and its products during the period of 20 years last past are so nearly in balance that it would be highly indiscreet to prohibit exports or even to disturb, at this time, the ebb and flow of the commodity, because any change in condition of commerce in oil, especially of exports, would tend to drive American refiners to foreign shores and probably provoke retaliatory action by foreign countries and perhaps cause the imposition of export taxes by foreign nations producing oil.

The federal Government is still the owner of vast areas embracing several hundred million acres of land, the title to which is held really in trust for the public generally. Within these areas are proven oil fields and also much unexplored and unexploited territory holding, in varying degrees, promise of oil in commercial quantities.

All these areas, except some special reserves, may fairly be said to be wide open to private appropriation through lease or otherwise. There seems to be no discretionary power anywhere to resist the exploitation of these lands and the plundering of the Government's oil resources. The leasing of the Indian lands is progressively mandatory until exhaustion.

This torrent of oil poured out by the Government itself from a rapidly diminishing and exhaustible resource held in trust for the public and an absolute essential to national defense and security helped to deluge the market and tremendously increase the vast volume of oil unrequired for essential use.

Waste by Government

Such production by the Government under such conditions and the forcing of such oil upon the market can be characterized by language only slightly less obnoxious than the term wilful waste.

The industry can hardly be expected, much less asked to aid in saving petroleum for essential purposes, to enlist in a crusade against existing methods of wasteful production, or to preserve the resource or any part of it, while the Government itself openly and determinedly invites and fosters the complete exploitation and inevitably the exhaustion of the only reservable supply which the Government can possibly protect and preserve.

And in reaching these conclusions I am not unmindful of the present advances in science, or those likely to be made in the future. Neither am I unmindful of the action of the Government in tacitly encouraging restricted production on government and Indian lands. Nor am I either overlooking the fact that our present abundance of oil is in no sense an augury for continued lavish flowage; rather such a condition would seem to presage a constant and irretrievable depletion of existing reserves.

Unit Operation

One form of relief from excessive and destructive competition may be found in the "unit pool" production plan which Henry L. Doherty has emblazoned upon the petroleum escutcheon. This plan has been quite effectively exploited, dissected, condemned and praised. But whether it can be seared into our rather adamant statutes remains to be determined. I do not look for "oil legislation" at the present session of Congress. In large measure, legislation will depend upon action by, and recommendations from the executive arm of the Government, particularly from the Federal Oil Conservation Board.

WEST TEXAS FIELDS

(Continued from Page 48)

and was plugged at 2,685 feet. Its No. 1 Powell-B was plugged at 2,673 feet after flowing 70 bbls. at 2,650-73 feet. Its No. 1 Sorg was plugged at 2,680 feet after flowing 10 bbls. at 2,651-81 feet.

Howard County

Amerada Petroleum Corp.'s No. 5 Roberts, located 330 feet south and 2,310 feet east of NW, Section 128, Block 29, W.&N.W.R.R. Survey, topped the pay at 2,968 feet and had an initial production of 1,054 bbls. in 12 hours at 2,968-89 feet. Andrews & McCamey's No. 1 Neal, located 250 feet from NE, Section 17, Block 32, Township 1s, T.&P. R.R. Survey, topped the salt at 2,015 feet, topped the lime at 3,140 feet and was dry and abandoned at 4,008 feet. Dunnigan & Hyer's No. 4 Clay, located 785 feet from south and 1,070 feet from west of Section 126, Block 29, was shot with 40 quarts at 1,782-1,807 feet and had an initial production of 85 bbls. Group One-Marland Oil Co.'s No. 1 Eason, located 2,440 feet from north and 2,513 feet from west of Section 6, Block 32, Township 2s, T.&P. R.R. Survey, had an initial production of 240 bbls. in 12 hours after having been shot with 200 quarts at 2,190-2,240 feet. Gulf Production Co.'s No. 5 Clay, located 990 feet south and 330 feet west of NE cor., Section 155, Block 29, W.&N.W.R.R. Survey, had an initial production of 120 bbls. at 1,820-45 feet. Hyer & Dunnigan's No. 2 Clay, located 280 feet south and 1,080 feet from west of Section 126, Block 29, topped the pay at 1,765 feet, was drilled to a total depth of 1,795 feet and had an initial production of 117 bbls. Marland and Donnelly's No. 1 Clay, located 2,310 feet from NE cor., Section 127, Block 29, topped the line at 2,170 feet, topped the pay at 1,907 feet, was drilled to a total depth of 3,135 feet, plugged back to 1,990 feet and had an initial production of 40 bbls. oil and 12 bbls. water.

Marland Oil Co.'s No. 2 Chalk-C, located 330 feet from north and 1,650 feet from east of Section 140, Block 29, topped the pay at 1,760 feet, was drilled to a total depth of 1,782 feet, shot with 20 quarts at 1,760-80 feet and had an initial production of 115 bbls. Plymouth Oil Co.'s No. 1 Abrams, located 1,650 feet from south and 2,310 feet from west of Section 5, Block 32, Township 2s, topped the pay at 2,264 feet, topped the lime at 2,034 feet, was drilled to a total depth of 2,297 feet and had an initial production of 1,198 feet. Moody Oil Corp.'s No. 6 Dora Roberts-D made 60 bbls. at 2,512-2,675 feet.

Jones County

Independent Oil & Gas Co.'s No. 2 Smith was dry and abandoned at 2,554 feet. Its No. 3 Smith was dry and abandoned at 2,578 feet. Snowden & McSweeney's No. 5 Bickley made 244 bbls. at 2,521-24 feet and was drilled to a total depth of 2,525 feet. Sinclair Oil & Gas Co.'s No. 2 Bickley was dry and abandoned at 3,008 feet.

Nolan County

Herbert Oil Co.'s No. 1 Pepper, center N half, Section 32, Block 22, T.&P. R.R. Survey, was dry and abandoned at 3,697 feet.

Pecos County

George Anderson's No. 1 University, center Section 11, Block 17, was drilled to a total depth of 1,997 feet, plugged back to 1,963 feet and made 7,000,000 feet of gas. California Co.'s No. 2 Yates, Lease 1, was temporarily abandoned.

Reeves County

Doctor Kitsos and others' No. 1 Kloh & Rumsey, 330 feet north and west of SE cor., Section 5, Block 54, Township 5, T.&P.R.R. Survey, was dry and abandoned at 1,250 feet.

Upton County

Humble Oil & Refining Co.'s No. 10 Ricker, located 2,310 feet from northeast and 3,280 feet from NW of Section 5, M. S. Denton Survey, topped the salt at 550 feet, topped the lime at 2,021 feet, and had an initial production of 54 bbls. in 12 hours.

Ward County

Prairie Oil & Gas Co.'s No. 1 Sealy topped the gas pay at 2,525 feet, was drilled to a total depth of 3,505 feet, plugged back to 3,040 feet and made 3,000,000 feet of gas. Talbot and others' No. 1 Dorr, located in Section 9, Block 5, H.&T.C.R.R. Survey, had a hole full of water at 2,550-70 feet and was dry and abandoned at 2,623 feet.

Winkler County

Amerada Petroleum Corp.'s No. 2 Daugherty, located SW cor. SE, Section 3, Block 74, made 35 bbls. of oil hourly, 12½ per cent water, at 3,110-20 feet. Empire Gas & Fuel Co.'s No. 2 Daugherty, located 330 feet north and 2,310 feet east of SW cor., Section 3, Block 74, made 1,500 bbls. at 3,140-3,202 feet. Humble Oil & Gas Co.'s No. 3 Hendricks-C, located 1,320 feet south and 330 feet east of NW cor., Section 10, Block B-12, flowed 780 bbls. at 2,835-2,977 feet. Marland Oil Co.'s No. 1 Tobe Morton, located SE cor., Section 27, Block B-12, made 80 bbls., 2½ per cent water, at 2,830-2,993 feet. American Maracaibo Co.'s No. 1 Hendricks made 35 bbls. oil, 50 per cent water, at 3,040-45 feet. Its No. 1 Hendricks-B made 60 bbls. net oil hourly, 7 per cent water, at 2,695-2,935 feet. Prairie Oil & Gas Co.'s No. 1 Lum Daugherty made 23 bbls. hourly at 3,130-40 feet. Prairie Oil & Gas Co.'s No. 1 Tobe Morton was temporarily abandoned at 3,112 feet. Pure Oil Co.'s No. 11-C Hendricks made 1,066 bbls. oil and 2,486 bbls. water at 2,570-2,734 feet. Shell Petroleum Corp.'s No. 1-F Hendricks flowed 2,944 bbls. in 16 hours, 6 per cent water, at 2,608-41 feet. Southern Crude Oil Purchasing Co.'s No. 2 Hendricks T-89-I flowed 1,400 bbls., 16 per cent water. Its No. 6 T-88-H Hendricks flowed 150 bbls. daily, 20 per cent water, at 3,020-24 feet. Its No. 2 Hendricks-T-88-O flowed 100 bbls. hourly at 2,918-25 feet.

DAILY AVERAGE PRODUCTION BY LEASES

WINKLER COUNTY

Week Ending February 5

Company, farm, sec., blk.—	Wells	Prod.
Amerada Petroleum Corp.:		
Cowden, 3, B-12	3	825
Atlantic O. P. Co.:		
Hendricks-A, 34, B-5	8	1,751
Hendricks-B, 44, 26	3	449
Hendricks-D, 29, B-5	8	3,726
Hendricks-E, 41, B-5	6	4,264
Hendricks-G, 40, 26	7	2,793
Hendricks-H, 28, B-5	1	69
Atlantic and Collett:		
Hendricks-F, 40, 26	13	5,016
Bankers Prod. Co.:		
Hendricks, 30, B-5	1	1,831
California Co.:		
Hendricks, 29, B-5	8	1,474
Cranfill & Reynolds:		
Hendricks-A, 28, B-5	2	270
Hendricks-B, 35, B-5	1	112
Hendricks-C, 33, 26	2	309
Hendricks-D, 33, 26	1	....
Hendricks-E, 33, 26	2	1,169
Cranfill and Texon:		
Hutchings, 47, 26	1	193
Culberson Bros.:		
Hendricks, 40, B-5	1	106
Eastland Oil Co.:		
Hendricks, 33, B-5	2	489
Hendricks-B, 35, B-5	1	272
Gulf Prod. Co.:		
Hendricks-A, 34, B-5	13	3,841
Hendricks-B, 46, 26	11	3,106
Hendricks-C, 40, B-5	6	2,522
Hendricks, 44, 26	1	354
Cowden, 3, B-12	1	1,049
Humble Oil & Refining Co.:		
Hendricks-A, 34, B-5	17	5,789
Hendricks-B, 29, B-5	6	1,237
Hendricks-C, 32, 26	6	939
Hendricks-B, 39, 26	6	1,181
Hendricks-C, 10, B-12	2	747
Independent Oil & Gas:		
Hendricks-A, 34, B-5	8	1,670
Howe-B, 44, 26	2	105
McCabe, 36, B-5	2	327
Hendricks, 42, B-5	1	20
Vardeman-B, 41, B-5	6	1,027
Magnolia Petroleum Co.:		
Hendricks, 29, B-5	8	959
Marland Oil Co.:		
Hendricks, 33, 26	4	1,384
Hendricks-A, 29, 26	2	224
Hendricks-B, 34, 26	2	201
May Prod. Co.:		
Hendricks, 34, 26	1	4
American Maracaibo Co.:		
Hendricks	1	152
Mining & Eng. Co.:		
Hendricks, 10, B-22	1	317
Murchison & Cranfill:		
Hendricks-A, 35, B-5	3	939
Hendricks-B, 35, B-5	3	951
Hendricks-C, 35, B-5	1	35
Hendricks-H, 32, 26	1	2,099
Hendricks-I, 47, 26	2	1,412
Prairie Oil & Gas:		
Hendricks, 40, 26	5	2,984
Cowden, 3, B-12	4	2,927
Pure Oil Co.:		
Hendricks-A, 41, B-5	11	2,534
Hendricks-B, 34, B-5	13	4,310
Hendricks-C, 45, 6	14	11,599
Republic Prod. Co.:		
Hendricks-A, 45, 26	6	2,981
Hendricks-B, 41, B-5	5	2,118
Hendricks-C, 42, B-5	5	317
Shell Petroleum Corp.:		
Hendricks-A, 45, 26	6	1,534
Hendricks-B, 29, B-5	5	1,508
Hendricks-C, 29, B-5	8	3,681
Hendricks-D, 41, B-5	6	683
Hendricks-E, 49, B-5	3	1,463
Hendricks-F, 46, 26	7	1,835
Hendricks-G, 39, 26	1	85
Shell-The Texas Company:		
Cowden-A, 3, B-12	6	1,031
Hendrick, 45, 26	6	2,294
Hendricks-A, 29, B-5	11	3,408
Hendricks-B, 40, 26	6	1 140
Hendricks-C, 40, 26	6	3,057
Hendricks-D, 40, 26	6	1,320
Hendricks-E, 40, 26	4	948
Skelly Oil Co.:		
Hendricks, 40, 26	12	3,775
Hendricks-B, 39, 26	2	30
Hendricks-C, 39, 26	1	254
Southern Crude O. P. Co.:		
T-67 Hendricks-A, 42, B-5	3	220

T-67	Hendricks-3-A, 4, B-12	4	578
T-67	Hendricks-B, 44, 26	5	823
T-67	Hendricks-3-B, 33, 26	5	680
T-67	Hendricks-C, 33, B-5	5	854
T-67	Hendricks-2-D, 28, 26	4	797
T-67	Hendricks-E, 42, B-5	4	143
T-67	Hendricks-F, 33, B-5	4	799
T-68	Hendricks- 3 A, 33, B-5	3	319
T-68	Hendricks-B, 46, 26	2	211
T-88	Hendricks-A, 44, 26	6	1,079
T-88	Hendricks-B, 4, B-12	3	714
T-88	Hendricks-C, 29, B-5	7	1,098
T-88	Hendricks-D, 4, B-12	4	2,704
T-88	Hendricks-H, 28, B-5	6	977
T-88	Hendricks-I, 30, B-5	7	2,503
T-88	Hendricks-J, 30, B-5	5	3,042
T-88	Hendricks-K, 41, 26	4	1,097
T-88	Hendricks-L, 4, B-12	3	937
T-88	Hendricks-M, 33, 26	29	17,196
T-88	Hendricks-N, 28, 26	5	1,644
T-88	Hendricks-O, 28, 26	2	1,034
T-88	Hendricks-P, 28, 26	1	287
T-88	Hendricks-Q, 27, 26	1	374
T-88	Hendricks-R, 27, 26	2	853
T-88	Hendricks-S, 34, 26	3	1,106
T-88	Hendricks-T, 34, 26	6	1,221
T-88	Hendricks-U, 41, 26	7	1,371
T-88	Hendricks-V, 29, 26	1	152
T-88	Hendricks-W, 5, B-12	1	367
T-89	Hendricks-A, 35, B-5	3	296
T-89	Hendricks-B, 35, B-5	2	333
T-89	Hendricks-C, 35, B-5	1	326
T-89	Hendricks-E, 40, B-5	2	97
T-89	Hendricks-F, 40, B-5	1	126
T-89	Hendricks-H, 46, 26	1	51
T-90	Hutchings, 47, 26	1	112
T-264	Hendricks, 5, B-12	1	off
Texon Oil & Land Co.:			
	Hendricks-A, 41, B-5	6	998
	Hendricks-B, 45, B-5	5	1,081
Winkler O. P. Co.:			
	Hendricks, 33, 26	1	113
Grand total Hendricks Pool		514	174,248
LECK AREA			
Atlantic, Kessler & Logan:			
	Leck, 3, 74	2	582
Amerada Petroleum Corp.:			
	Leck, 3, 74	2	378
Empire Gas & Fuel Co.:			
	Daugherty, 3, 74	2	425
Magnolia Petroleum Co.:			
	Scarborough, 1, C-22	1	132
Shell and Llano Oil:			
	Scarborough, 1, C-22	2	88
Shell and Danciger:			
	Leck, 3, 74	2	651
Total Leck area		11	2,256
O'BRIEN POOL			
Marland Oil Co.:			
	Tobe Morton, 10, B-12	1	405
Wentz Oil Corp.:			
	Tobe Morton, 10, B-12	1	257
Richardson et al:			
	Stockton, 50, F	1	419
Total O'Brien Pool		3	1,081
Grand total Winkler Co.		528	177,585

BOGGY CREEK DOME WELL FLOWS 62 BBLS. PIPE LINE OIL AN HOUR

By Neil Williams

CORSICANA, Tex., Feb. 11.—Deepened 6 feet in the sand, Humble Oil & Refining Co.'s No. 1-B Todd on the south side of the Boggy Creek Dome was brought in flowing at the rate of 62 bbls. an hour pipe line oil. The well originally was brought in two weeks ago at a depth of 3,595 feet spraying an estimated 100 bbls. daily, but it was decided to deepen the hole in an effort to improve its production. This well is approximately 2,000 feet from production, but is on a line between production on the southeast flank and a wildcat completed several months ago.

Boggy Creek is expecting another well in this week in Humble's No. 3 Lizzie Smith, which Monday was standing waiting to drill out cement plug at 3,663 feet, below which is an oil-showing sand. Humble's No. 1-B Jones is drilling at 1,410 feet, its No. 4 Earle & Ragsdal is in rock at 464 feet, and No. 1 Neches River is a rig.

On the Keechi Dome, Anderson County, J. S. Cosden & Co.'s No. 2 Douglass is delayed with drill stem stuck, the bottom of the hole being in hard shale and boulders at 3,562 feet. Pure Oil Co.'s No. 2 Willie Bruce, Bethel Dome, Anderson County, is drilling to sticky shale at 4,203 feet. This company's No. 1 Neils in Van Zandt County has been shut down temporarily in sticky shale at 860 feet.

In Falls County, Caruth & Stewart's No. 1 Flowers is drilling shale at 230 feet. Gruver & Stiles' No. 1 Stiles, same county, is drilling lime at 888 feet. Paggi Brothers' No. 1 Adams, Falls County, has been shut down at 1,572 feet in shale.

Henderson Petroleum Co.'s No. 1 Cade, Dorsey Survey, Henderson County, is drilling sticky shale at 611 feet. Patty and associates' No. 1 Randall, Leon County, has set 10-inch casing at 285 feet to test a sand showing some oil at a total depth of 305 feet.

Riverland Oil Co.'s No. 1 Hancock, Limestone County, R. Scott Survey, has drilled to 2,361 feet in shale and has been shut down. Milch & Clark's No. 1 Johnson, Milam County, has been deepened to 1,954 feet, where a drill stem had only a slight showing of oil. Bonwell & Hill's No. 1 Boohr, Milam County, has completed derrick for a 2,500-foot test.

In Navarro County, J. K. Hughes and associates' tested salt water in their No. 1 McGowan and abandoned the hole at a total depth of 3,224 feet. Hicks & Deering have a derrick up for No. 1 Prince.

East Central Texas

Boggy Creek	2,673
Cedar Creek	215
Currie	481
Mexia	6,019
Minerva	725
Nigger Creek	390
Powell	9,180
Richland	425
Thrall	33
Wortham	1,415
Total	21,556
Total last week	21,529
Increase	27

OIL SECURITIES ARE INACTIVE AND SAGGING

(Continued from Page 145)

profit of £405,280. After deducting £126,445 development expenses on the El Mene Field, £20,665 expended during the year in exploratory boring outside El Mene and £88,698 depreciation on plant and machinery there was a net profit of £169,472. In previous year the company reported a net profit of £186,389 after writing off £260,686 for year's development expenses.

Oklahoma Gas & Electric

Oklahoma Gas & Electric Co. declared the regular quarterly dividend of 1¾ per cent on preferred, payable March 15 to stock of record February 28.

Simms Petroleum

Simms Petroleum Co. declared a dividend of 40 cents, payable March 15 to stock of record February 28. This is the same amount as paid on December 15, 1928.

Woodley Petroleum

Earnings of Woodley Petroleum Co. of Shreveport, La., during 1928 amounted to $1.40 cents per share on 265,500 shares outstanding, before depreciation and taxes and $1.09 after charging off these items. J. R. Parten, president, and all other officers, R. J. O'Brien, Shreveport, and Frank Alberts, Muskegon, Mich., vice presidents; J. R. Pope, secretary, R. H. Deas, treasurer; P. J. Slimer, assistant secretary, and J. C. Oden, assistant treasurer, all of Shreveport, were re-elected. These, with G. J. Kooiker, Holland, Mich.; E. G. Palmer, Shreveport; Harry Stormfeltz, Detroit, Mich.; L. H. Sherbacow, New York, and H. W. Davenport, El Dorado, Ark., comprise the board of directors.

New Skelly Oil Directors

At special meeting of directors of the Skelly Oil Co., Clarence R. Bitting, managing director of Fisher & Co., and Carle C. Conway, president of Continental Can Co., were elected directors, increasing the board to nine members, from seven.

Associated Oil

Associated Oil Co. has called for redemption March 1, $1,2000,000 of its 12-year 6 per cent notes at 102½. Serial numbers of bonds called are on file with Los Angeles Stock Exchange.

Ohio Oil

Ohio Oil Co. declared the regular quarterly dividend of 50 cents, payable March 15 to stock of record February 15.

Vacuum Oil

Vacuum Oil Co. declared a quarterly dividend of $1, placing stock on $4 annual basis, against $3 previously. Dividend is payable March 20 to stock of record February 28.

OIL BONDS ON THE NEW YORK CURB
Quotations Compiled by Francis, Bro. & Co., Members New York Stock Exchange, Kennedy Bldg., Tulsa, Okla.

	Company—	Date	Pct.	Int.	For week ended Feb. 8— Sales	High	Low	Close
11,603,000	American Nat. Gas. Co.	Oct. 1942	6½	A&O	No sales.			
3,000,000	Beacon Oil Co.	Nov. 1936	6	M&N	3,400	113	112¾	112¾
18,900,000	Cities Service deb.	Jan. 1966	6	M&N	No sales.			
15,000,000	Cities Serv. refunding deb.	Jan. 1966	5	M&S	11,000	90¼	89⅝	90¼
24,843,700	Cities Service Gas Co.	May 1942	5½	M&N	No sales.			
12,000,000	Cities Service Gas P. L. Co.	Jan. 1943	6	J&J	7,500	98	97½	97½
12,000,000	Continental Oil Co.	Nov. 1937	5¼	M&N	3,400	94½	94	94½
3,000,000	Dixie Gulf Gas Co. A	Sept. 1937	6½	M&S	3,100	87½	87	87
18,000,000	Empire Oil & Ref. Co.	Apr. 1942	5½	A&O	4,400	90½	90	90½
3,877,100	Galena Signal Oil Co.	Apr. 1930	7	A&O	400	101	101	101
30,904,000	Gulf Oil of Pa.	Dec. 1937	5	J&D	900	100	100	100
12,000,000	Gulf Oil of Pa. debs.	Feb. 1947	5	F&A	4,400	100⅝	100⅛	100⅛
4,000,000	Houston Gulf Gas	Apr. 1943	6	A&O	3,900	90	90	90
4,000,000	Houston Gulf Gas	Apr. 1943	6½	A&O	7,200	90½	90	90½
6,339,000	Independent Oil & Gas	Mar. 1939	6	M&S	12,000	106	102½	104½
15,000,000	Lone Star Gas Co.	May 1942	6	M&N	2,500	98⅞	98¼	98½
11,650,000	Richfield Oil Co.	Sept. 1941	6	M&S	No sales.			
1,427,000	Richfield Oil Co.	Jan. 1931	5½	J&D	3,500	100⅝	100	100¼
9,733,000	Sun Oil Co.	1939	5½	M&S	3,800	101½	101	101
4,000,000	Transcontinental Oil Co.	Apr. 1930	7	A&O	No sales.			
2,500,000	Warner-Quinlan Oil Co.	1942	6	A&O	No sales.			

CONSERVATION PLAN EFFECTIVE FEB. 14

(Continued from Page 37)

their decline curves have been well flattened.

A copy of a letter which has been sent to all producers interested in the Greater Seminole area by Umpire Collins follows. It sets out the procedure which will be followed in handling the actual work of proration.

Letter to Operators

"To the Seminole Producers: The resolution as adopted on February 5 has been endorsed by the producing companies having 97 per cent of the production in the Greater Seminole area; therefore the plan as outlined will be put in force as of 7 a. m., February 14, and is as follows:

"Commencing 7 a. m., February 14, the average daily production by leases for the first five days in February shall constitute the potentials until March 1, when a 24-hour gauge will be taken for the new potentials for the period March 1 to March 15.

"The total allowed production from each lease as of 7 a. m., February 14 to 7 a. m., March 1 may be produced at any time during this period, but in no case shall it exceed this amount.

"All wells in the Greater Seminole area which have been drilled in since February 5 shall take the average production since the wells have been on production, up to February 14 and such average shall constitute the potentials for the period February 14 to March 1. An affidavit giving the daily production and the average on new wells should be filed with the umpire as soon after February 14 as possible.

"All drilling wells upon reaching the sand shall be required to shut down for four days; this delay to constitute the proration of said wells for the period February 14 to March 1. An affidavit giving the dates shut down on top of the sand shall be filed with the umpire. The usual delays such as waiting for cement to set, etc., will not be allowed as shutdown time.

"Affidavits showing the production by leases and the production from new wells for the period February 14 to March 1 shall be filed with the umpire as soon after March 1 as possible.

"The allowed production (percentage of the potential) for February 14 to March 1 is as follows:

	Pct.
Seminole City	82
Bowlegs	82
Searight	82
Earlsboro	82
Little River	82
St. Louis	80
Maud	76

"In case the Mission area is opened for production, a new percentage will have to be adopted and you will be notified of this change as soon as we have sufficient data on which to base our figures.

"Any adjustments of potentials should be taken up with the umpire immediately."

INSTITUTE FAVORS STATE LEGISLATION

(Continued from Page 37)

ready accomplished until they have more authority from their States.

Resolutions Adopted

Following are three resolutions adopted by board of directors:

Whereas, the committee appointed by the president of this Institute to study and determine the conditions existing in the oil industry, finds that there is an imminent overproduction of oil which if not regulated, threatens to become acute and to result in the flow of oil into unnatural channels of consumption to the disadvantage of the industry and in the use for inferior purposes of this most valuable limited and irreplaceable natural resource, to the serious injury of the public; and,

Whereas, this overproduction of oil is due to present competitive methods of producing oil which result also in great physical waste of both oil and gas through the failure, among other things, to recognize and observe the principle that the prevention of the waste of natural gas found in oil producing formations is of paramount importance in connection with the economical production and conservation of oil; and,

Whereas, the waste of gas cannot be prevented in an oil pool where there is diversified ownership, as long as any one operator, through ignorance of the above principle, or through selfish disregard for the correlative rights of his neighbors or through desire to capture more oil than underlies his property, disregards the above principle and continues physically to waste gas and oil and refuses to co-operate with his neighbors in accepting preventive measures; now, therefore, be it

Resolved, that we the Board of Directors of the American Petroleum Institute, favor the enactment of laws to prevent the waste of such gas by the various oil producing states in which natural gas is being unnecessarily wasted. Be it further

Resolved, that we favor the enactment of laws in the various oil producing states that will permit agreements between operators in a single pool for the orderly development of oil and gas holdings therein and the enactment of laws vesting in some public authority the power to prevent not only such unnecessary waste of gas, but also to prevent the continuance of drilling and producing practices which result in underground physical waste of oil or gas, including the power to make and enforce orders prorating production of oil in a pool between the several leases therein and establishing and carrying out a program for the orderly development of a pool through the orderly development by each operator of his separate holdings therein. Be it further

Resolved, that the president be and he is hereby authorized to appoint such committees and take such steps as may be necessary to co-operate fully with other agencies in the accomplishment of these purposes and that he be instructed to file a copy of this resolution with the Federal Oil Conservation Board.

Directors Pledge Support

The second resolution follows:

Whereas, we, the Board of Directors of the American Petroleum Institute, have this day by resolution favored the enactment of laws by the various oil producing states where natural gas is being unnecessarily wasted to prevent such waste; and,

Whereas, the now imminent overproduction of oil threatens to develop an acutely serious situation before such legislation can become effective, now, therefore, be it

Resolved, that pending the enactment of the appropriate laws the members of this board, in their capacities as execu-

tires of companies producing oil from pools where overproduction is imminent, hereby pledge their full powers through all legal co-operative methods to prevent the development of such overproduction with its attendant waste.

Asphalt Road Building

The third resolution follows:

Whereas, it is of importance to the petroleum industry to increase by every legitimate means the intelligent use of petroleum products; and,

Whereas, this importance is particularly apparent in connection with the large production of the heavier of asphalt base petroleum; and,

Whereas, the improvement of the public highways is of direct and tangible value to the people of the country as a whole; and

Whereas, the rapid and comprehensive improvement of the secondary or farm service roads may be found a means of giving direct relief to the farmers; and,

Whereas, it has been pointed out by the United States Bureau of Public Roads in addresses, publications and press releases that hundreds of thousands of miles of public highways may be improved at low cost by the use of asphalt products; and,

Whereas, conservative estimates have indicated theoretical possible use of asphalt products in the improvement of the public highways to the extent of 9,000,000,000 gallons annually over a 10-year period; and,

Whereas, a great national program looking to such highway improvement with asphalt products would serve the interests of the farmer, the motorist, the petroleum industry, and the Nation as a whole; now, therefore, be it

Resolved by the Board of Directors of the American Petroleum Institute, in session on February 11, 1929, that it is the sense of this Board that:

First: The petroleum industry should give its moral support to the movement supporting this larger program of road improvement.

Second: That the industry should extend every practical and helpful co-operation to the United States Bureau of Public Roads, to state highway departments and to organizations actively concerned in the improvement of the highways of the United States or of states or road districts.

Third: That it should be made known to the Federal Oil Conservation Board that this greater program of highway improvement is one means of directing the large production of heavy petroleum products into constructive channels.

SEARCH FOR PETROLEUM IN AUSTRALIA CONTINUES

(Continued from Page 46)

have been and are being obtained from America.

In Queensland

The Queensland companies are drilling in Jurassic formation. An entirely different field is provided by New Guinea, where a good deal of drilling has been done in Miocene strata, with decidedly interesting results. The Shell group was recently negotiating for rights over one New Guinea concession which produced as follows in its prospecting wells: 80 feet, 50 gallons per day (No. 3); 292 feet, 20 gallons per day (No. 4); 470 feet, 10 gallons per hour (No. 6). Smaller quantities were met at other depths, and a sample from 470 feet showed on analysis: benzine 34.5 per cent, kerosene 54.0 per cent. Gas pressure up to 100 lbs. was encountered.

Amendments of the local ordinances governing oil prospecting were obtained to facilitate the negotiations, but up to the present Shell remains dissatisfied, and it is now probable other interests will take over the further testing of the concession. On the Papuan side of the island, the Commonwealth Government and the Anglo Persian Oil Co. are in partnership in drilling. Here the worst difficulty is flowing mudstone and a high gas pressure, which has been causing a lot of trouble with casing. Dr. R. K. Richardson, one of the principal geologists of the Anglo Persian Oil Co., is with a party of other scientists carrying out an oil survey under arrangement with the Commonwealth Government, and on data so far obtained has made the guarded statement that "there are indications of oil in both Papua and the Mandated Territory," and that "if they can be found under suitable stratigraphic and structural conditions, there is no reason why paying oil fields should not be discovered." An area has been indicated as being likely to provide these conditions.

Western Australia

A good deal of excitement was caused recently by results obtained from a test by the Freney Kimberley Oil Co. in Western Australia. Official analysis of a mixture found adhering to the tools showed: crude 45.6, per cent; asphaltene, 4.0 per cent; water, 33.6 per cent; earthy and other insoluble matter, 16.8 per cent. For various reasons there had been no water shut-off and on the recommendation of the Commonwealth Government's geological adviser (Doctor Woolnough) the hole was mudded off pending arrangements being made to withdraw the water and test for production. As a result of a brief reconnaissance of the Wooramel River area, also in western Australia, it was found recently there exists there a lower marine permocarboniferous, series consisting of a considerable thickness of sandstones, shales and thin limestones, many of which contain phenomenally rich assemblages of marine fossils in a perfect state of preservation, and in sufficiently "rolling" formation to provide dome-like structures; a thin series of freshwater beds follows the marine beds; a brilliantly colored and much variegated series of sandstones appears to follow the freshwater series; and beds of gypsum, and possibly bands of rock salt, occur towards the top of the lower marine beds, and probably also among the variegated sandstones. These circumstances are regarded as favorable for accumulation of oil in commercial quantities.

New Zealand

No doubt remains of the existence of crude oil in considerable quantities in New Zealand. The drawback is that owing to volcanic action, suitable structure for retention of the oil in commercially payable quantities has so far eluded the searchers. It is calculated that to date New Zealand has produced some 60,000 barrels of oil. "Elbof" geophysical survey parties from Germany have recently been operating in the Taranaki district of New Zealand, and claim to have located a structure with large oil deposits, for which drilling plant is now being obtained. Another "Elbof" party is about to make a start with surveys in Queensland, Australia.

The Queensland Minister for Mines (A. J. Jones) is a consistent optimist as to oil being produced in his state. "The evidence as shown by the production of filtrated oil and large quantities of petroliferous gas from which high quality oil has been recovered by absorption process at Roma; heavy residual oil at Longreach, and proved petroliferous gas south of Longreach," he says, "strengthens geologically and scientifically the belief that Australia contains oil in large commercial quantity."

AMERICAN GAS ASSN. EXECUTIVES IN SESSION

(Continued from Page 46)

greatest benefits to those who use its service and to itself.

In the general discussion, Alexander Forward pointed out that the strong points of the gas industry are its stability, its adaptability, technical development, sound credit and its co-operative spirit.

Conservation Resolution

A. F. Bridge, vice president of operation, Southern Counties Gas Co., covered conditions in California from an operating standpoint and brought out a number of very interesting points. The most important part of his talk dealt with a resolution adopted at a recent meeting of California operators. The resolution, which proved of vital interest to practically every delegate present, was as follows:

It is the sense of this committee, after one year of earnest effort, looking to a reduction in the waste of gas in the State of California; that

Whereas, it is apparent that the great majority of operators in the State are in full accord with a gas conservation program; and

Whereas, it has been demonstrated that these operators are fully capable of designating the ways and means for such conservation; and

Whereas, it has been found that in certain instances lack of results may be attributed to the unwillingness of minority of operators and lessors concerned to co-operate, now therefore,

Be It Resolved, that it is the sense of this committee that enabling legislation should be enacted whereby authority may be made available for putting into effect, through the agency of a central organization of operators, plans, rules and regulations formulated by a majority of operators in any field or district where waste is known to exist or is considered imminent.

State Government Approves

The importance of the resolution is quite obvious as the Governor and other State officers who have followed the efforts at conservation, realizing that the punch was the one thing lacking to make this work effective, have invited the California oil industry to draft legislation to remedy this deficiency. A committee of attorneys and executives is now engaged in formulating a bill for submission at the next session of the California Legislature. It is to be hoped that the oil and gas industry can agree on the form of statute required and thus take advantage of this opportunity to obtain constructive legislation. Mr. Bridge also commented on the fact that similar matters are being considered throughout other oil-producing regions of the country primarily in the interest of restraining unnecessary oil production and presented a rough draft of the two bills prepared by a subcommittee of the American Bar Association at the request of the Federal Oil Conservation Board for enactment by states in which overproduction is a problem.

It is Mr. Bridge's opinion that legislation will not afford a complete and satisfactory solution to the problem in California unless it provides for some agency either appointed by the state or preferably elected by oil producers which shall have authority necessary to plan, initiate and compel execution of statewide gas and oil conservation in accordance with all of the proposed methods.

Practically every angle of the gas business came in for some discussion at the 1929 session of the American Gas Association and if the attendance is any criterion it was all of the utmost importance.

C. O. G. Miller, president of the Pacific Light Co., spoke on Public Utility Financing on the Pacific Coast and he was followed by LeRoy M. Edwards, general counsel of the Southern Counties Gas Co., who commented on the influence and importance of the Pacific Coast.

The utilization of refinery gas and the storage and measurement of large volumes were handled by W. S. Yard, vice president of gas operation of the Pacific Gas & Electric Co., and S. W. Meals, president of the Carnegie Natural Gas Co. and chairman of the natural gas department of the American Gas Association. C. A. Munroe, president of the Northern Utilities Co., and R. G. Griswold, chief technician of the Cities Service Co., closed the meeting with a discussion on Propane and Butane Competition. B. J. Mullaney, vice president of The Peoples Gas Light & Coke Co. and vice president of the American Gas Association, spoke briefly at the close of the sessions and thanked the members for their co-operation in behalf of the association.

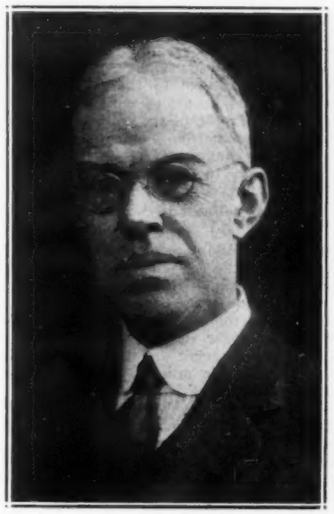
SECURES INJUNCTION

The Oil Well Improvements Co. of Tulsa secured a temporary injunction February 8 in the court of United States District Judge R. E. Kennamer at Tulsa against Paul Arbon & Co. from the further manufacture, sale or use of control heads embodying any of the features covered by the Oil Well Improvements Co.'s patents.

S. W. MILLER, WIDELY KNOWN ENGINEER, DEAD

Samuel Wylie Miller, consulting engineer of the Union Carbide and Carbon Research Laboratories Inc., of Long Island City, N. Y., known both in the United States and in Europe as a pioneer in oxyacetylene welding and an authority on its application, died on February 3 at his home in Hollis, Long Island, N. Y., at the age of 62.

Mr. Miller was a director and past president of the American Welding Society, a director of the American Bureau of Welding and chairman of the oxyacetylene committee of the International Acetylene Association. He was a member of the American Society of Mechanical Engineers, American Institute of Mining and Metallurgical Engineers, American Society for Steel Treating, British Iron and Steel Institute, Institute of Metals and other scientific and engineering organizations.



Samuel W. Miller

PIPE LINE TO NEW MEXICO

FORT WORTH, Tex., Feb. 9.—The Texas Pipe Line Co. has announced its decision to build a line into southeastern New Mexico and will afford the first outlet connecting that territory with outside markets. It strengthens the general conviction that major production will be developed in Lea County and may result in quite an extensive drilling campaign being started in that territory.

PRICES BELIEVED TO BE NEAR BOTTOM

(Continued from Page 36)

tillate even though the general fuel market remains very sluggish. Gas oil and fuel oil fail to show any material change. These are being freely offered at the regular market, no one willing to attempt an advance and where the production exceeds the amount being applied on contracts, being burned as plant fuel and used as cracking stock it is usually stored in hopes of some strengthening in the future. So long as fuel stocks continue to be increased the possibility of any change in the price level of fuel oil is remote and the solution, as many refiners see their problem, is in cracking it.

Lubricants and wax have suffered a rather inactive period as a group but bright stock continues to be scarce and is being offered only in limited quantities and at prices above the level of last week. Neutrals, however, have shown the opposite tendency and while the general price structure remains unchanged, the little business that is available is admitted to be highly competitive. Cylinder stocks have also shown marked stability. This may be explained by the favorable bright stock market, but along with this fact, there is an actual shortage of good

cylinder stock producing crudes. The Burbank crude production has shown a constant decrease, thus limiting the supply of a very suitable crude. Other cylinder stock crudes have shown a similar decline. At present there is no flush supply promised for the future unless it should be the new Oklahoma City Field. The cylinder stock being produced from this crude has an exceptionally good color and is relatively free of tar. It does have a rather high cold test but this factor does not eliminate it by any means. Wax prices took a sharp fall and very little material moved over the week. Refiners refused to sell when the price fell to 4 cents and it is difficult to determine just what might be established as the going price. A large purchase of wax is said to have been made and now this wax, having failed to find an outlet is being offered at prices materially below what manufacturers are willing to accept. Until this situation is cleared, there is not much chance for its strengthening even though the statistical position of the wax market remains very favorable.

Gasoline and Naphthas

The weighted average prices shown for the four more important grades of gasoline show little change from those of last week even though there was considerable scattered purchases of material considerably below these. This again showed the faith the larger refiners have in the future of the market and their determination to hold the present level of market prices. There was but limited trading in the 60-62 437 endpoint gasoline compared to a year ago, showing the effect of the present relatively high natural gasoline prices. The higher gravity gasolines, as a whole, have not been as popular as the regular motor grade and the supplying of this winter's fuel seems to have been worked out on a plan of bettering the regular U. S. Motor grade and using this instead of pushing the special fuels.

The weighted average for the regular 58-60 U. S. Motor grade on Monday's sales is shown as $.0709 compared with $.0702 a week ago. Similarly, the 60-62 437 endpoint grade showed a weighted average price of $.0745 this week compared to $.0726 a week ago.

Natural Gasoline

The AA grade was consistently traded at 6¾ cents with a few sellers asking 6⅞ cents. The BB and C grades were actively traded at 5¼ cents and should an advance come in any one of the list of five grades, it is more likely to show up first in these two. Refiners have favored these grades in their purchases because of their relatively low price and this material may be blended into their current shipments at present with very little evaporation loss due to the cold weather.

Kerosene and Distillates

The 41-43 grade of kerosene was noticeably scarce in large quantities at the close of the week and the price was advanced one-eighth cent to 5⅛ cents with many of the larger plants holding out for 5¼ cents as their minimum price. The expected spring demand is given as the reason for the present optimism and this is further strengthened by the very active market at present due to the long cold weather in the northern states where kerosene stoves are in general use.

Distillates showed every possibility of being advanced fractionally in the near future, should the present cold weather continue. Another week of this weather will no doubt bring an actual shortage of the better grades. The low cold test gas oils are also commanding a premium as the supply remains limited. A clean straw colored, zero cold test gas oil easily brings from a quarter to a half cent above the industrial grade.

Fuel Oil and Gas Oil

No change is shown in the fuel oil market and the industrial grade of gas oil. Undoubtedly, the severe winter has materially helped to consume a great volume of both fuel oil and gas oil, but as yet the benefits of this condition fail to show up in strengthening the refiners' position in that market.

Lubricating Oil and Wax

Neutrals were generally quoted at last week's market level with price concessions granted for the larger orders. Bright stock prices rose to 31 cents as the general quotation and very few orders were taken below this figure. In similar manner, the cylinder stock market was well defined. Wax was traded in very small quantities, the manufacturers being unwilling to accept the bids of the purchasers who were being offered wax, said to be from other sources, at prices as low as 3½ cents. Mid-Continent refiners are refusing to meet such a price and contend the present break in the market will be of short duration.

DEALERS STABILIZE PRICE OF GASOLINE

(Continued from Page 138)

means, as the artificial readjustment recently made by service station operators is not entirely justified from an economic standpoint as this movement did not contemplate the elimination of cut-throat competition on the part of small independent refiners and unethical jobbers. The successful maintenance of present prices on standardized gasoline depends upon how much business reverts into the bootleg market. The retailers association has asked the general public to accept present posted prices and refrain from shopping around in search of cheaper motor fuel. It is quite probable, however that the public will patronize those service stations offering the cheapest gasoline and this brings conditions right back to the original status which precipitated the general price-cutting which started early this year. The failure of many leased company owned stations to give operators a normal income is also becoming an important factor. Operators of leased stations in a great many instances are earning less now than they were when on a straight salary basis with the result that a number of stations have been given up and are reverting to the original owners.

DUNDEE CRUDE PRESENTS NEW REFINERY PROBLEM

(Continued from Page 138)

vice president of the Standard of Indiana, purchasers of the oil has spurred the Chicago men to greater activity in laying plans for the Muskegon refinery.

Exhaustive tests are now being made at an independent refinery and it is expected that within the next two weeks definite announcement will be made as to whether the proposed plant will be built.

Storage capacity for 165,000 bbls. of crude oil will be erected immediately if it is decided to build the refinery. It will be six months before the refinery could be completed.

It was learned today that several other refinery projects are being considered for Muskegon, all of which will depend upon tests of the Dundee oil now being made by a number of refineries.

The impossibility of refining any merchantable product except fuel oil from the bulk of the production of the Muskegon Field was stated as the reason for the cut. Mr. Bullock further announced that only 10 per cent of the present Dundee production will be accepted by the company through the Dixie Oil Co., its subsidiary in the field, and that only for a limited time. He intimated that within a week or perhaps less some of the Dundee production would be accepted by the company. The company will continue to purchase the upper Traverse formation oil which is known as a sweet oil because of the lack of any sulphur content. The Dundee oil, however, has not only a high sulphur content but some other chemical ingredients which have baffled the research experts of the Standard Oil Co. of Indiana until it was decided by the company to call a halt to the influx of Dundee oil from Muskegon.

"As long as it was coming at the rate of only 1,000 or 2,000 bbls. a day we could handle it and continue our experiments to determine if there was not some way to make use of the Dundee oil," said Mr. Bullock. "But when the Dundee production of the field mounted during the past month until we were getting as high as 7,500 bbls. of it a day, we were forced to throw up our hands and call a halt.

"Fuel oil sells for only 40 to 50 cents a barrel and we cannot afford to pay $1.26 per barrel for crude that will make only fuel oil in spite of our efforts to refine it," continued Mr. Bullock. "This Muskegon product makes unburnable kerosene and gasoline that we dare not place upon the market, because of its knocking and other bad qualities.

"We shall continue to experiment in an effort to find some way to eliminate the objectionable qualities of the Dundee crude," he concluded. "In the meantime, however, we have decided that we must stop this flood of bad oil for we cannot build storage tanks fast enough to hold it all at the present rate of production of the field."

About 10 carloads of Dundee crude oil have been or will be shipped out to as many different refineries throughout the country for laboratory and refinery tests, to check the experience of the Standard of Indiana. In addition smaller samples will be shipped to the United States Bureau of Mines station at Bartlesville, Okla., the University of Michigan at Ann Arbor, Mich., and to State Geologist R. A. Smith, at Lansing, Mich.

Refineries which will test the Muskegon crude oil include: Shell Petroleum Corp., of East St. Louis, Ill.; Sinclair Refining Co., of East Chicago, Ind.; National Refining Co., of Cleveland, Ohio; British-American Refining Co., of Sarnia, Ontario, Canada; Imperial Refining Co., Williams Refining Co., of Streator, Ill.; Johnson Oil Refining Co., of Oklahoma, and two other independent refineries in the Chicago area.

It is hoped that by these exhaustive and widespread tests the exact character of the Dundee crude will be determined and its possibilities for the production of something more than fuel oil will be established.

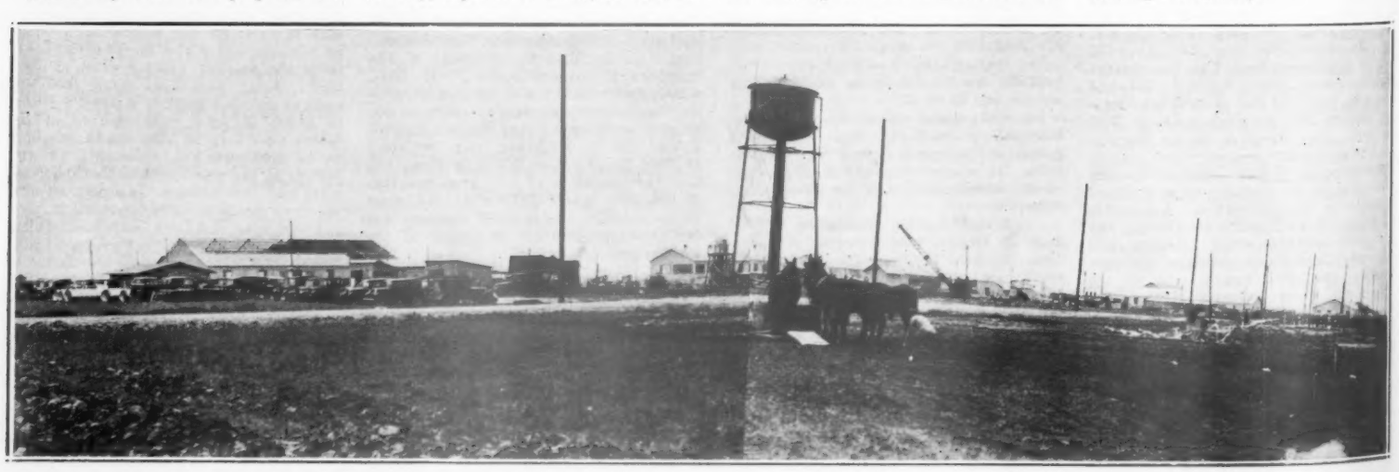
CONSTRUCTION STARTED ON SHELL'S HOUSTON REFINERY

HOUSTON, Tex., Feb. 9.—The accompanying picture was taken this week at the site of the new refinery of the Shell Petroleum Corp. (Roxana) located east of Houston on the Houston Ship Channel. The refinery which will have a crude oil capacity of 25,000 bbls. daily with large cracking facilities, is the largest refinery project announced for 1929.

Preliminary work of laying out the refinery and terminal is progressing with all speed with between 600 and 800 men employed in various tasks of excavating, laying lines, starting up of tanks and dredging slips for loading docks. This work is the slowest and possibly the most particular as much depends on the way the plant is laid out and as soon as this is completed the first unit of the refinery, expected to be 10,000 bbls. capacity, will be put up. It probably will be in operation by July 1.

Laying of the terminal end of the Shell Pipe Line Co.'s line being laid from West Texas also is about completed and the remainder of the line will be ready for use by the time the terminal is completed.

As in the opening of new oil fields, the building of this terminal and refinery has started a boom town, which has been designated, though not officially, as Shell. Frame buildings are now going up on all sides until an almost full fledged oil town of cafes, hotels, barber shops, grocery stores and drug stores exists. The main picture shows the several warehouses and machine shops to handle the equipment and supplies for building the refinery.



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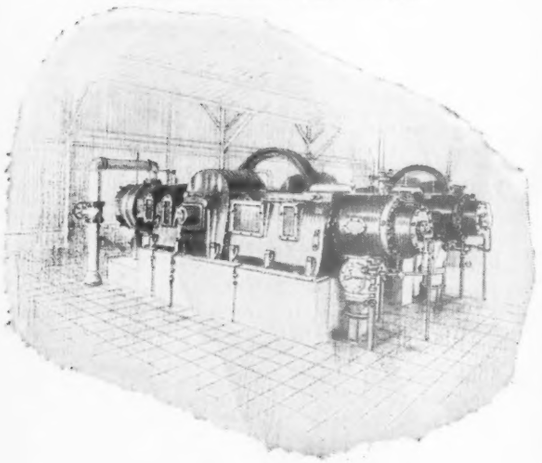


GARLOCK-875

For Piston Rods in Good Condition

High Pressure Service

Garlock-875 is an improved design Gas Compressor Metal Packing which, after severe service tests, has established itself as the ultimate packing for this purpose.

It reduces operating cost as it will not score or wear the rod out of round. The combination breaker-scraper rings remove the sand and grit, an abrasive element, from the piston rod and the method of lubricating allows the rod and rings to work in an oil bath.

The High Pressure Packing is an assembly of eight sections of rings, two pressure-scraper rings and six double packing rings, enclosed in a sectional cup case as illustrated, or a split case if required. All parts of the packing are accurately machined and ground. The rings are manufactured from high carbon content interstitial cast iron and so designed that incorrect application is impossible.

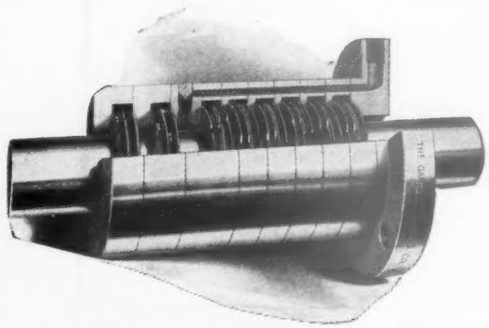
The High Pressure Packing is recommended for Gas Compressor Service handling all medium and high pressures.

Low Pressure Service

Garlock-875 is also supplied to work against low pressures. It is made of the same material as the High Pressure Packing with a slight change in design. Five sections of double packing rings are enclosed in a sectional cup case, or a split case as may be specified. Where gas containing grit is encountered one of the double packing rings is eliminated and one or two breaker-scraper rings substituted.

Blue Prints and Specifications

Complete specifications and blue prints will be supplied upon application. We suggest that you write our nearest Oil Field Sales Office.



Garlock-875 for High Pressure Service

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The Standard Packing of the World

California Oil Field Operations for December, 1928

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for December amounted to 21,574,703 bbls., an average of 695,958 bbls. per day. This is an increase of 32,374 bbls. per day over November production.

Total stocks of crude and all products in Pacific Coast territory increased during the month 2,340,332 bbls. The total stocks at the end of the month were 141,057,009 bbls. The total stock decrease for 1928 was 738,392 bbls. Comparative figures as of December 31, 1928, November 30, 1928, and December 31, 1927, are shown in detail.

There were 81 wells completed during the month with an initial daily production of 144,324 bbls., compared with 63 wells completed during November with an initial production of 65,774 bbls.

PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons)

District—	Barrels per Month	Daily Average Dec. 1928	Daily Average Nov. 1928	Daily Average Dec. 1927
Kern River	556,683	17,957	18,132*	23,2
Mount Poso	4,673	151	84	1
Fruitvale	40,769	1,315	1,082	
Round Mountain	2,507	81	46	
McKittrick	154,432	4,982	4,867	4,9
Midway-Sunset	2,267,014	73,129	74,908	69,8
Elk Hills	596,557	19,244	19,549	23,6
Lost Hills-Belridge	135,536	4,372	4,324	4,3
Coalinga	310,665	10,021	10,175	18,7
Kettleman Hills	116,433	3,756	2,609	
Wheeler Ridge	25,377	819	840	
Watsonville	1,938	63	63	
Santa Maria	153,074	4,938	5,242	5,8
Summerland	3,767	121	122	
Elwood-Goleta	371,838	11,995	8,394	
Rincon	126,434	4,078	4,514	
Ventura Avenue	1,571,890	50,706	52,017	51,1
Ventura-Newhall	175,249	5,653	5,760	5,9
Los Angeles-Salt Lake	44,481	1,435	1,546	1,4
Whittier	50,978	1,644	1,642	1,7
Fullerton (Brea Olinda)	455,055	14,679	15,720	14,9
Coyote	389,590	12,567	13,078	13,2
Santa Fe Springs	3,020,905	97,449	54,693	38,8
Montebello	340,948	10,998	10,840	12,9
Richfield	540,090	17,422	17,116	21,4
Huntington Beach	1,534,593	49,503	51,283	59,8
Long Beach	5,794,281	186,912	195,655	198,3
Torrance	481,837	15,543	15,761	20,2
Dominguez	322,194	10,393	10,323	13,6
Rosecrans	215,937	6,966	5,993	8,2
Inglewood	849,588	27,406	27,766	31,9
Newport	930	30	85	
Seal Beach	881,957	28,450	29,154	42,0
Potrero	20,817	674	270	
Lawndale	15,686	506	.....	
Total	21,574,703	695,958	663,584	610,8
November	19,907,526	663,584	.....	
Increase	1,667,177	32,374	.....	

*Corrected total for Kern River for November is 543,964 bbls.

STOCKS

	Dec. 31 1928	Nov. 30 1928	Dec. Stock Increases	Dec. 31 1927
Heavy crude, heavier than 20° A.P.I., including all grades of fuel	101,306,108	99,772,153	652,481	94,907,1
Refinable crude, 20° A.P.I. and lighter	17,954,434	17,243,243	711,191	20,268,5
Gasoline	10,766,410	10,802,366	*35,956	13,712,8
Naphtha distillates	1,541,414	1,480,812	60,602	1,901,2
All other stocks	9,488,643	9,418,103	70,540	9,529,5
Total all stocks	141,057,009	138,716,677	2,340,332	140,318,6

*Decrease

DEVELOPMENT

District—	New Rigs Up	Active Drilling	Completed	Daily Initial Output	Active—Producing	Ab'doned—Wells Drlg.	Ab'doned—Prod.
Kern River	4	3	4	913	1,227	1	
Fruitvale	1	8	1	600	3	..	
Mount Poso	7	8	1	175	4	..	
Round Mountain	..	2	2	552	2	..	
McKittrick	1	3	3	290	287	1	
Midway-Sunset	10	15	4	682	2,462	..	
Elk Hills	..	1	..	....	216	..	
Lost Hills-Belridge	3	3	4	100	313	..	
Coalinga	..	..	..	....	790	1	
Kettleman Hills	5	2	..	....	1	..	
Wheeler Ridge	..	..	..	....	34	..	
Watsonville	..	..	..	....	7	..	
Santa Maria	1	5	1	160	221	..	
Summerland	..	1	..	....	21	..	
Elwood-Goleta	4	8	1	5,000	7	..	
Rincon	1	6	1	100	25	..	
Ventura Avenue	7	39	4	5,785	141	1	
Ventura-Newhall	1	24	..	....	521	1	
Los Angeles-Salt Lake	..	..	..	....	319	..	
Whittier	..	..	..	....	168	..	
Fullerton	1	5	..	....	377	..	
Coyote	..	1	..	....	207	..	
Santa Fe Springs	20	212	28	112,078	318	..	
Montebello	..	3	..	....	167	..	
Richfield	..	4	2	1,055	269	..	
Huntington Beach	3	4	4	460	554	3	
Long Beach	11	146	15	11,405	844	..	
Torrance	..	..	..	....	604	..	
Dominguez	..	..	1	395	68	..	
Rosecrans	3	2	..	....	103	..	
Inglewood	..	..	1	794	221	..	
Newport	..	2	..	....	4	..	
Seal Beach	5	6	2	1,525	140	1	
Potrero	..	3	1	1,155	2	..	
Lawndale	1	..	1	1,100	2	..	
Miscellaneous drilling	8	126	..	....	.....	3	
December	97	640	81	144,324	10,711	12	
November	129	639	63	65,774	10,721	11	
Increase	32*	1	18	78,550	10*	1	
Average for year 1927	97	404	75	39,992	11,276	23	
Average for year 1926	95	422	76	32,635	11,288	24	
Average for year 1925	105	417	79	42,247	11,393	28	
Average for year 1924	103	510	103	42,412	10,903	28	
Average for year 1923	111	759	82	114,690	8,928	24	

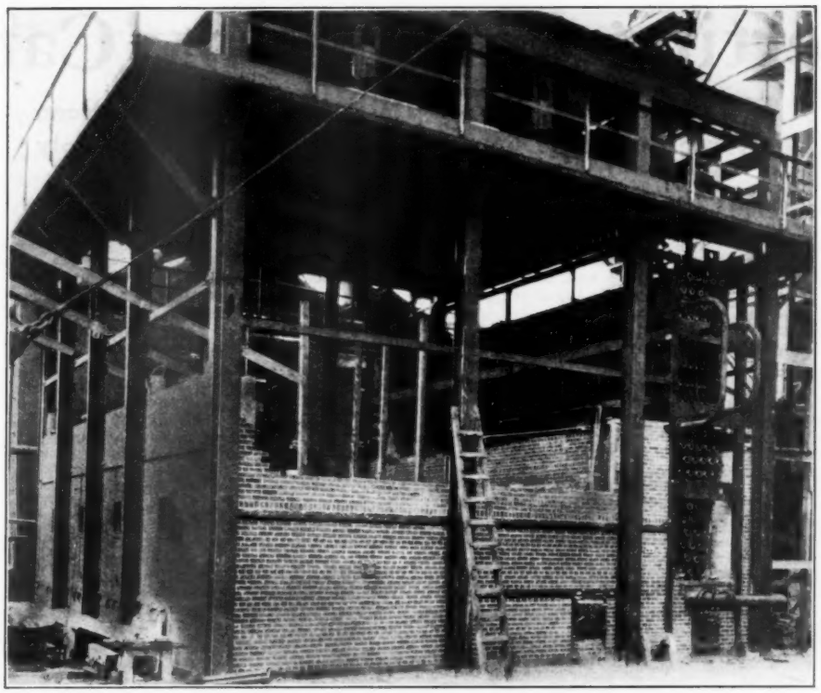
*Decrease

SALVADORAN TESTS

The Salvadoran government has recently granted a permit to two citizens to make tests for petroleum in the central portion of the country. The permit covers only six months, and is not transferable. It is reported an American citizen is the promoter of these tests, and that he is returning to the United States to complete financing of the exploration, having arranged in El Salvador for the required 40 per cent of the capital. He claims to have signed contracts with the Salvadoran government for areas in both the Metapan and Zacatecoluca districts for a period of 10 years.

WILL DISCUSS FIELD RECORDS

FORT WORTH, Tex., Feb. 9.—H. J. Vance, McCamey, Tex., superintendent of production in West Texas for Marland Production Co., will deliver a paper on "Value and Importance of Accurate Field Records" at the Dallas meeting of Texas-Louisiana-Arkansas District, Division of Development and Production Engineering, A.P.I. The spring meeting will be held April 3 and 4.



Foster Tube Stills

The accompanying photograph shows a Foster tube still during erection. The frame work is composed of heavy steel construction and supports all of the oil heating tubes including the roof tubes, which run the length of the setting. The roof tubes absorb radiant heat directly from the furnace.

The main bank of heating tubes is supported independently of the brick work, so that expansion and contraction strains are not imposed upon the walls. The main tube bank is protected from the radiant heat of the furnace by a fire brick bridge wall which causes the gases to pass downward through the tube chamber.

The top rows of seamless steel tubes in the main tube bank are covered with a cast iron extended surface of moderate area. The castings are reamed out and shrunk over the tubes. The next lower rows of tubes have a larger area of extended surface exposed to the gases. Below these are tubes comprising the superheater section which supplies superheated steam for process use. The bottom rows of tubes are covered with castings having the maximum extended area for heat absorption. The design of Foster tube stills maintains a remarkably even rate of heat absorption.

The Foster tube still illustrated forms one element of a complete Foster refinery unit consisting of still, fractionating tower, heat exchangers, pumps and complete system of control. Results are guaranteed.

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Converting Carbons by Catalysis

Difficulties That Barred Its Application Have Been Overcome. Has Direct Bearing on World's Oil Supply

By Dr. Carl Krauch*
Director, I. G. Farbenindustrie Aktiengesellschaft, Ludwig shafen am Rhein, Germany

The laws of chemical equilibria and thermodynamics enable us to predict whether a reaction is possible or not. For instance, proceeding from a simple hydrocarbon such as methane, a large variety of other hydrocarbons may be obtained such as gasoline, petroleum, unsaturated hydrocarbons, and, by oxidation, alcohols, aldehydes, ketones, acids, and so on.

Why do molecules not get into the equilibrium predicted by thermodynamics in spite of the vast number of molecular collisions which condition the reactions? The reason is that nature has enclosed the activity inherent in the molecules like a nut in a shell; to set this reactivity free, we have to crack the shell and to crack it, of course, in the easiest possible way. In other words, the falling of free energy characteristic of all chemical change does not occur spontaneously but must be induced; in every process the reacting molecules have to be fed with energy to overcome the impediments resisting the course of chemical change.

Now, it has been found that the simplest representatives of hydrocarbons, such as methane, are especially hard nuts to crack; the energy of activation necessary to get them in the state of reactivity is very considerable. This implies that chemical changes of hydrocarbons proceeding in stages are extremely slow; practically they do not occur at all unless special means are applied. To show that this holds good in the view of kinetics would here lead too far.

The means by which to overcome the impediments referred to are, above all, the catalysts. In certain cases the introduction of electrical or radiating energy into the reaction system comes in question; namely in cases requiring an especially high introduction of energy, the thermic equilibrium of which is, accordingly, very unfavorable. Where catalysts offer little or no advantage, nothing remains to be done but to bring the molecules into the necessary high states of activation by the introduction of foreign free energy, that is, through impacts of electric particles as they occur in silent discharges, or through absorption of radiating energy. Nature shows us these photochemical processes in a grandiose way in the assimilation of carbonic acid brought about by sunlight, the process upon the products of which we all live.

The catalysts are of inestimable value in order to start reactions, to control them, and to obviate secondary and subsequent reactions that are possible but not desirable.

Properties of Substances

What are the properties of substances best suited for use as catalysts? Experiments have afforded us the following considerations: The infra-red spectra of hydrocarbons inform us that the hydrocarbons from methane upward show an increasingly electro-polar nature, that they possess what is called a dipole moment. The researches of modern atomic physics show that matter is built up from electric particles, and that the keeping together of the atoms, as well as their linkage within the molecules, is effected by the attracting and repelling forces of these electric charges. If atoms and molecules are exposed to electric fields, for instance, to the electro-magnetic fields of vibration of the infra-red, visible, and ultraviolet rays, it is found that they show an electro-neutral behavior at distances which are large as compared with their own diameter. In many cases, however, when the distances reach the order of magnitude of molecular dimensions, such behavior is no longer apparent. We may conclude from this that the positive and negative electric charges contained in the atoms and molecules do not unite in one and the same center, but that they are placed at a distance from one another. In consequence, the particles in question act in a dipolar way similar to a bar magnet. In an electric field, they are subjected to orientating forces, and if they are intermixed with molecules of a dipole moment stronger than their own, an orientation takes place around those of the stronger dipole moment. The greater the charges in a molecule, and the greater the distance of the charges from one another, the greater its dipole moment and its electrostatic affinity.

Thus it may be assumed that contact substances of a strong electropolar nature, such as halogen compounds, certain oxides, sulphides, and so on, effect a specific deformation of attached hydrocarbon molecules, and make possible a chemical attack upon the sensitive spots laid bare on them. Such catalysts often control reactions in a highly satisfactory manner. The induction of dipole moments in other molecules through the dipole moment of the hydrocarbon molecules, comparable to the phenomena of induced magnetism and electric influence, also often seems to bring about catalytic action. This seems to be the way in which the attachment complexes are formed in the case of certain metallic catalysts and in which the reactivity of hydrocarbons is influenced. Metals whose atoms, in the view of Bohr's theory and according to spectroscopic measurements, distinguish themselves by easy displaceability of the outer electrons, often have a special catalytic effect. Further, it must be borne in mind that the forces of dipoles and induced dipoles are especially effective if molecules are in exposed positions on the surface of the catalyst. That the surface of solid substances may possess such spots of raised reactivity, varying according to the mode of producing and treating the substances, is generally known; the significance of this phenomenon in the activity of heterogeneous catalysis has been pointed out by H. S. Taylor of Princeton University in his numerous investigations.

The splitting up of the methane, first member of the paraffin hydrocarbons, into its elements has been carried out technically for the production of carbon black; it may also serve for the production of hydrogen. By means of catalysts, the rather high splitting temperature, about 1,300 degrees Centigrade, may be lowered by 300 degrees.

The incomplete splitting up of methane is explicable only by the subsequent polymerization of the resulting radicals. This reaction has often been investigated because of the fact that the catalytic conversion of methane into ethylene, acetylene, benzene, and so on, is of great technical interest. Methane is largely convertible into acetylene, ethylene, and other hydrocarbons if conducted over heated metals such as platinum, certain metalloids, oxides, salts, and ceramic materials, provided that the proper conditions of streaming and cooling have been maintained; however, the requisite temperature is rather high, and it is also difficult to avoid the depositing of carbon upon the catalyst.

The splitting up of methane into acetylene and hydrogen is one of the previously mentioned cases in which the application of catalysts offers no advantage. On the contrary, the presence of catalysts or of solid substances in general, especially the walls of the reaction vessels, can act unfavorably by urging the reaction in the undesired direction of the formation of carbon and hydrogen. This phenomenon is probably most closely connected with the influence to which the methane molecule is subjected while being adsorbed on solid surfaces. A computation according to Nernst's heat theorem, shows that the equilibria between methane and acetylene,

$$2CH_4 \; C_2H_2 + 3H_2 — 92 \text{ cal}$$

under atmospheric pressure, at various temperatures, are as follows:

	Per cent
At 800 degrees	2.2
At 1,000 degrees	20
At 1,200 degrees	62

On the other hand, the equilibrium between methane and its elements: $CH_4 \rightleftharpoons C + 2H_2$ is markedly shifted to the side of complete decomposition at a temperature as low as 900 degrees. Accordingly, when heating methane to the temperature required for the formation of actylene, it is important, in order to avoid decomposition of the gas into its elements, to pass through the critical temperature—which is below 1,000 degrees—as quickly as possible and eliminate as far as possible the presence of heated walls. These conditions are excellently fulfilled if methane is heated in the electric arc. A further improvement of the working process is obtained by adding hydrogen to the methane, as, according to the laws of thermodynamics, the formation of soot is thereby retarded.

Conversions of Higher Carbons

From the conversions which take place when simple hydrocarbons are heated in the presence of catalysts, I now pass to to conversions of higher hydrocarbons. As already remarked, these reactions, in most cases are of a very complicated nature, consisting of various single processes that take place side by side or immediately following one another, such as splitting up, polymerization and isomerization. The problem is made more difficult by the fact that in the case of the higher hydrocarbons, whose catalytic conversion is of a special practical interest, the raw materials are usually very complicated mixtures which are either difficult to separate, or inseparable by our present methods; and, moreover, they vary in composition according to their sources.

In order to get a deeper insight into this problem, the question must first be raised: where does the splitting up of the hydrocarbons start—at a C—C linkage or at a C — H linkage, and at which point of the molecule? In 1896 Haber expressed the view that, in the case of pyrogenous decomposition, the C — C linkage is more stable than the C — H linkage in the aromatic series; in the aliphatic series the reverse is true. Thanks to the progress made in the last few years in atomic and molecular physics, we are today in a position to calculate, with fair accuracy, the amount of energy necessary for the splitting up of the various linkages of the hydrocarbons. This is made possible by the cyclic process given by Fajans, involving the

*Delivered before the International Conference on Bituminous Coal, Pittsburgh, Pa.

OIL AND GAS FROM SLACK COAL EXTRACTED BY HAYES PROCESS

By James Balph[1] and M. J. McQuade[2]
[1]Secretary Coal Carbonization Co., Pittsburgh; [2]President Ben Franklin Coal Co. of West Virginia, Pittsburgh

The primary objectives to be attained from the distillation of coal at low temperature are:

First. To make possible the production of a suitable domestic fuel from our high volatile bituminous coals. This product to be of a character that ignites readily, lends itself to ease of control during combustion, to burn smokelessly or nearly so, and to be in such marketable form as to withstand handling with the least degradation.

Second. To obtain the low volatile solid residue in a form that is highly combustible on boiler grates or in which it is a dry, easily pulverized product, which may be readily prepared for pulverized fuel firing.

Third. The recovery of a large yield of tar oil of such characteristics as have the highest market value.

Fourth. A low quantity yield of gas, and that produced, to be of a high calorific value.

Fundamentally low temperature carbonization is a problem of heat transfer and to make any process commercially profitable, this must be accelerated to the greatest degree. The process should be such as to be applicable to the distillation of a wide range of coals of both the noncoking and coking class, and should be flexible in its adjustments to operation on coals of varying characteristics; it must be of the continuous automatic operation type, or as nearly so, as possible, to obtain a minimum of labor cost.

Initial investment cost per ton-day input of coal is necessarily an important factor as to the commercial possibilities, as also are the maintenance and replacement costs.

Having these objectives and fundamental features as a basis for this development of a suitable apparatus the Hayes process has been brought to a stage where commercial success is assured.

An initial unit was constructed at Moundsville, W. Va., nearly two years ago for the West Virginia Super Fuel Co. by the Coal Carbonization Co. of Pittsburgh, Pa., owners of the patent rights. This unit having a rated capacity of 70 tons of coal input for 24 hours.

The purpose of this plant is to produce a domestic fuel from slack coal. The slack is first carbonized at a low temperature and the solid product is put in briquetted form for the market. This unit has been in semicommercial operation to date.

A second carbonizing retort of a rated capacity of 50 tons per day, in which some features of a later development are embodied, has been recently put in operation

Analysis of Coal

The average analysis of the coal processed is the slack produced by the Ben Franklin Coal Co. at Moundsville, W. Va., being the three-quarter inch screenings, the average analysis of which is as follows:

Per cent moisture	2.25
Per cent volatile	39.40
Per cent fixed carbon	51.04
Per cent ash	7.31
	100.00
Per cent sulphur	3.69
B.t.u. value	13,300.00

A rescreening of the slack over a one-half inch bar screen is done at the carbonizing plant and the coarser sizes are reduced by grinding to give an average

(Continued on Page 167)

*Delivered before the Second International Conference on Bituminous Coal, Pittsburgh, Pa.

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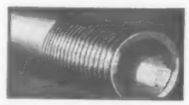

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combustion heats of the hydrocarbons and those of hydrogen and diamond, the heat of dissociation of hydrogen and the heat of sublimation of diamond. According to Grimm, the following values result:

	C-H linkage Cal.	C-C linkage Cal.	Ratio C-H/C-C linkage
Aliphatic hydrocarbons	92	71	1.3
Aromatic hydrocarbons	101	96	1.05

In the aliphatic series, then, or splitting up C—C linkages less energy is required than for C—H linkages. In the aromatic series the energies required for splitting up the one are approximately the same as for the other. A few preliminary calculations show that in the aliphatic series the stability of the various C—C linkages is not the same throughout. There exist small differences depending on whether it is a question of disrupting a straight carbon chain or of splitting up a side chain.

Among the substances we investigated with respect to their catalytic activity in the cracking of oil products and tars, we found some more apt to attack the C—C linkage, some the C—H linkage. To those which chiefly split up carbon chains belong, among others: Vanadium, molybdenum, tungsten, uranium and their oxides; to those whose action is chiefly dehydrogenating copper, nickel, sulphur and selenium.

The conditions are especially favorable for this type of process if the heat necessary for the cracking is imparted to the oil through the catalyst itself; for instance, in such a way as to use the catalyst as an electric heating coil.

The catalytic properties of iron claim interest on account of its general use in the construction of cracking apparatus. Iron has a very considerable influence on the cracking process, shown by the lowering of the splitting-up temperature which it brings about. It favors especially the dehydrogenation of aromatic and hydroaromatic hydrocarbons, and, at the same time, the condensation of the fragments to solid products of high molecular weight, reaching as far as the formation of coke.

The cracking process therefore takes another course if contact of the oil with hot iron surfaces is avoided. In cracking plants the catalytic action does not proceed sofely from the iron itself but from the deposition carbon with which the hot iron parts quickly become covered.

Anhydrous Aluminum Cloride

Anhydrous aluminum chloride has a special significance as a catalyst in the cracking process. It was used for the first time by Friedel and Craft in 1877 for the splitting up of hydrocarbons, and later applied to minerals oils by G. W. Gray and McAffee. It brings about a far-reaching conversion of the large hydrocarbon molecules, forming low-boiling products which, unlike the products obtained with nearly all other catalysts, consist only of saturated hydrocarbons. The aluminum chloride can be formed advantageously from aluminum and dry hydrogen chloride in the oil to be split up. In this connection it has been found that by previous treatment of the aluminum with certain solutions of metallic salts it is possible so to activate it that the yield of gasoline increases considerably. The fact that when working with activated aluminum the cracking temperature may be as low as from 100 to 180 degrees is worth mentioning. The action of the aluminum chloride or of activated aluminum and hydrochloric acid, may be explained as follows: Aluminum chloride belongs to the substances already mentioned whose molecules have pronounced unsymmetrical electric field, a dipole moment, in consequence of which $AlCl_3$ is capable of influencing the electric forces which keep together the atoms within the hydrocarbon molecules, causing an increase in their reactivity.

Lubricating Oil

Of special practical interest for us in Germany is the manufacture of lubricating oil. We are not, as you fortunately are, in the position of being able to separate lubricating oils of the most diverse kinds in more than sufficient quantities directly from crude oil. Can inferences be drawn from the properties of hydrocarbons that are good lubricants as to the constitution of their molecules? Evidently such molecules must have the property of ranging themselves in films easily against each other and of forming an adsorption layer on the surface of the bearing metal in which the molecules take a definite orientation.

Anhydrous aluminum chloride has proved an excellent catalyst in the manufacture of lubricating oil, its polymerizing effect preponderating over its splitting up effect under suitable conditions, and especially at low temperatures. If, according to Allenet's process, aluminum chloride is suspended in an indifferent solvent, for instance, petroleum ether, and gaseous olefines are introduced, they are polymerized to lubricant hydrocarbons of high molecular weight. We have introduced olefines in middle oils containing aluminum chloride. We found that not only do polymerization processes take place, but also condensations between the middle oil hydrocarbons and the olefines introduced. It is also possible that the two processes overlap. The end result is that out of the thinly liquid middle oil highly viscous lubricating oils are obtained which, in their essential properties, are practically the same as the natural oil. Another catalyst well suited for the manufacture of lubricating oil is the borofluoride, as found by Fr. Hofmann.

Conversion of Methane

Among the catalytic conversions of hydrocarbons in the presence of oxygen and steam, the conversion of methane is again of special interest, since large quantities are obtainable in coke furnace gas as well as in natural gas. Its suitability for the production of hydrogen makes it one of the most important basic materials of the chemical industry in this age of the synthesis of ammonia and the hydrogenation of crude oil and coal.

Apart from direct splitting up of methane into its elements, hydrogen is obtainable from methane through oxidation with oxygen or with steam:

(1) $CH_4 + \frac{1}{2}O_2 = CO + 2H_2 \quad + 7$ Cal.
(2) $CH_4 + H_2O = CO + 3H_2 \quad -51$ Cal.

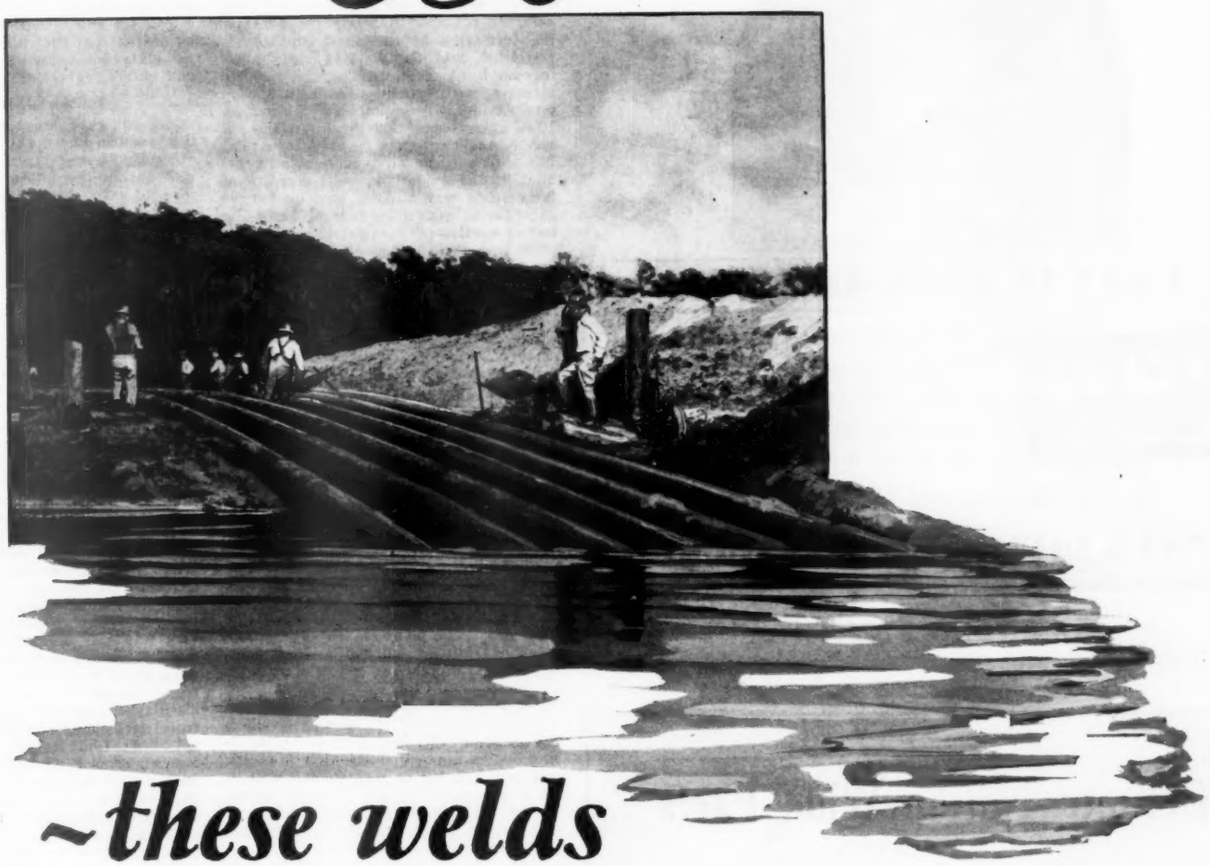
Through oxidation with steam it is possible to obtain from one volume CH_4 3 volumes H_2 and, if the resulting CO is converted with steam to CO_2 and H_2 4 volumes of H_2 can be gained; that is, twice as much as by direct splitting up. The heat required for the reaction is, however, considerably greater, while the temperature of the reaction, about 1,200 degrees, is not considerably lower than in the case of the direct splitting. We succeeded in finding catalysts which enabled us to carry the reaction to almost complete conversion at 600 degrees. We have worked this process both in the discontinuous mode, in which the reaction vessel was heated periodically and the mixture of methane and steam passed through it, and in the continuous mode, heating the vessel from the outside.

Interest in Oxidation

The oxidation of medium and higher hydrocarbons of the paraffin series has found increasing interest in the last few years. We ourselves directed attention chiefly to the oxidation of the paraffins that we have available in the by-product tars obtained in the process of low temperature distillation, or gasification, of our Middle-German lignite and also the tar which becomes available in the hydrogenation of lignite, in quantities varying with the methods of working. We have accordingly endeavored to carry on its oxidation to fatty acids required in the soap industry, of which acids considerable quantities have to be imported at the present time.

The problem of manufacturing fatty acids for the purpose alluded to was not easy to solve. We again have before us a basic material which varies greatly and the composition of which is not accurately known. In the treatment of the heated paraffin with air it is not sufficient to attain a definite degree of oxidation within a short time. Fatty acids suitable for clear soaps can be obtained from the oxidation product only when the reaction is controlled. It must be borne in mind that the slight difference in the prices of paraffin and fatty acids makes

Buried 35 feet deep



~these welds had to be perfect

The photograph shows a pipe line being laid across the Houston Ship Channel, 2,625 feet wide. The pipe was entirely welded before being sunk 35 feet below the surface.

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it impossible to use complicated and expensive methods of working up the oxidation product.

Our experiments were at first concerned with the question of the velocity of oxidation with air which, according to the available literature, was said to be very slight. Taking care to bring about a very intimate contact between air and paraffin by transforming the paraffin into a foam, and applying certain catalysts, we succeeded in reducing the time of oxidation from several days to a few hours, and in lowering the reaction temperature considerably. By these means, the formation of undesired products is restricted, and the yield of fatty acids increased. A small part of the paraffin together with easily volatile oxidation products—chiefly products with less than 10 C-atoms—pass together into the receiver, and can again be used for oxidation. The main product remaining behind in the oxidation vessel consists of fatty acids, wax alcohols, and unchanged paraffin, in quantities varying according to the conditions of oxidation. The paraffin and alcohols from the main product return likewise to oxidation. Besides normal acids, the fatty acids may contain oxy-acids. We have found various ways of refining the fatty acids to such a degree that, in the judgment of soap experts, they stand comparison with good fatty acids derived from natural fats.

Catalytic Hydrogenation

Passing on to the catalytic hydrogenation of hydrocarbons, I should like to confine myself to the field at present in the focus of public interest, namely, the hydrogenation of crude oil and coal, and their distillation products. I count coal among the hydrocarbons, as in hydrogenation the behavior of coal is much the same as that of hydrocarbons.

The hydrogenation of crude oil and coal is, strictly speaking, an overlapping of cracking or coking, and hydrogenating processes. The point is, that at the moment of splitting up the hydrocarbons, hydrogen is attached to the primary fragments so as to form compounds of lower molecular weight enriched in hydrogen, and the formation of coke is avoided. For this purpose, hydrogen, according to Bergius, is applied under high pressure, and care is taken to regulate the temperature accurately in the reaction vessel. In this way the drawbacks of the usual cracking or low temperature distillation processes are eliminated, though not completely. These drawbacks are the considerable formation of methane, which means that gasification goes too far; and the formation of heavy oils and coke, which means that desiccation goes too far.

We have in hand through choice of catalyst and working conditions either the preservation of the chemical character of the hydrocarbons worked up, or the changing of their character. We can control the hydrogenation in such a manner that from aliphatic, hydro aromatic or aromatic basic materials the corresponding types of hydrocarbons can be obtained; on the other hand, aliphatic products can be converted into aromatic products, and vice versa. What importance this fact has in the production of gasolines of certain antiknock value, I need not emphasize here.

Antiknock Value Increased

In this connection I should like to mention that the increasing of the antiknock value of fuels through the addition of iron pentacarbonyl, lead tetraethyl and other substances, appears to us to be a case of negative catalysis, the excessive velocity of the reaction, namely the explosion-like combustion of the fuel being reduced to the desired measure by such additions. The investigations of J. A. Christiansen, H. S. Taylor, Pease and Baeckstroem, on the effect of inhibitors in thermic and photochemical oxidation processes, lead to the supposition that the effect of negative catalysts rests, in the cases of strong exothermic reactions, upon the circumstance that they break off the reaction chains formed; in other words, they intercept the activation energy passed on from one reacting molecule to the next. Their suitability for this purpose is explained generally by their very complicated molecular structure, and their consequently high capacity to take up energy in the form of vibration energy. In these cases, the mechanism of negative catalysts is not exactly the contrary to the mechanism of positive catalysts before mentioned. It is possible that in some cases the mechanism works in just the opposite manner, namely, when a negative catalyst forms an attachment-complex with a reacting molecule in which a linkage of the molecule is not loosened but stabilized; thus considered, the controlling action of a contact substances may be explained by saying that the catalyst is capable of loosening some linkages of a molecule and stabilizing others.

Industrial Methods

According to the basic material, and the products aimed at, the hydrogenation of crude oil and tar is industrially carried out in the following ways: (1) in form of a fine spray, conducted over the catalyst, or (2) vaporized, or (3) in the liquid phase. In the last case the catalyst may be suspended in the basic material to be hydrogenated, or fixed in the reaction vessel, or attached to the agitator. In many cases, as in thick oils, it is advisable to work in two stages; pre-treating the basic material with hydrogen in a specially controlled gas oven, or in a liquid phase oven, then hydrogenating further the resulting low-boiling products in the gas phase.

Coal may similarly be hydrogenated in the form of powder distributed in hydrogen or suspended in a suitable high boiling oil. If gasoline is to be obtained as the main product, it is advisable to transform the coal first into a middle oil, then working it up further in the gas phase. The high boiling oil resulting in the first stage must be separated from the ash contained in the coal and from the coal particles not liquefied. To carry through this separation in a technically satisfactory way was one of the most difficult tasks of the whole process. In our large-scale plant at Leuna we use the lignite from our Middle-German pits, the low distillation tar produced by ourselves from such lignite, and crude oil products. At Ludwigshafen-Oppau we have been experimenting with other lignites as well as bituminous coal from various parts of the world. These experiments were intended to show the suitability of all such products for the manufacture of gasoline, which, for the time being, is our chief product. The differences we had to cope with after starting the first big oven at Leuna in April, 1927, were extraordinary. However, in comparative experiments carried out in several big ovens working simultaneously, we recognized their causes and, in a relatively short time, succeeded in removing them. At present we have reached at Leuna an annual production of 70,000 tons of gasoline, of which 40,000 tons are obtained from coal. At the end of next year, we hope to be able to raise the production 250,000 tons. The gasoline produced by us has found a ready market for the reason that in all essential properties it equals a good gasoline obtained from crude oil in the ordinary way.

The close resemblance that synthetic gasoline and other products obtained in the hydrogenation of coal, bear to their natural counterparts suggests that the origin of crude oil may be explained in this way. Peat and coal layers, after getting into greater depths, combine with hydrogen under pressure, thereby being partially converted in liquid hydrocarbons. This presence of hydrogen in the interior of the earth is deduced, as I may remind you, from the fact that both rocks and volcanic gases contain it. Apart from the generally accepted views of its formation, its origin might be attributable also to the action of water vapors at high temperature upon coal. We have ascertained that the products from various coals hydrogenated without addition of crude oils, are optically active. Their activity rises, like that of crude oils, with their viscosity, that is to say, with their boiling limits; it is of the same orientation and order of magnitude.

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Carson County

Marland Production Co.'s No. 1 S. B. Burnett-L, 440 feet south and 1,320 feet west of the NE cor. of Section 79, Block 4, I.&G.N. Survey. McIlroy Oil Co.'s No. 1 T. D. Lewis, 330 feet south and east of the NW cor. of the SW of the NE of Section 115, Block 4, I.&G.N. Survey.

Gray County

The Texas Company's No. 6 H. M. Davis, 330 feet south and 1,650 feet west of the NE cor. of the NW of Section 86, Block 3, I.&G.N. Survey.

Hutchinson County

Marland Production Co.'s No. 1 Johnson Brothers-C, 450 feet south and west of the NE cor. of Section 5, Block 1, B&B. Survey.

Moore County

Amarillo Oil Co.'s No. 2 J. C. Warrick-A, at the center of the south 160-acres of Section 92, Block 46, H.&T.C. Survey. McMan Oil & Gas Co.'s No. 2 J. T. Sneed, Jr., 2,260 feet south and 990 feet west of the northwest corner of the J. W. Proctor Survey and located in the M. Robinson Survey.

Wheeler County

Lone Star Gas Co.'s No. 4 T. C. Jones, at the C of the SE of the NE of Section 1, Block 24, H.&G.N. Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

Barkley-Meadows & Riner-Baileys' No. 1 L. F. Wilson, 300 feet south and east of the northwest corner of the south 80 acres of the east 320 acres of the Thomas Toby Survey, A-646. Hart & McLaughlin's No. 1 W. R. Stone, 150 feet south and 550 feet east of the NW cor. of the SE of Section 2, S.P.R.R. Survey, A-1,220. McCarty Oil Co.'s No. 1 L. F. Wilson (McCrory), 450 feet south and east of the northwest corner of Lot 6, Section 22, A.T.N.C.L. Survey. Reno Oil Co.'s No. 9 H. Wilmot-A, 450 feet north and 150 feet west of the southeast corner of the north 320 acres of Section 4, S.P.R.R. Survey, A-1,044.

Underwood Drilling Co.'s No. 3 T. B. Wilson, 1,140 feet south and 1,150 feet west of the NE cor. of Section 12, Block 3, H.&T.C. Survey, A-1,286. Venmex Oil Co. and Hines' No. 1 S. G. Helm, 2,365 feet north and 150 feet west of the SE cor. of Section 2, Block 3, H.&T.C. Survey, A-1,024. American Refining Co. Properties' No. 2 S. M. J. Benson, 1,250 feet north and 1,694 feet east of the SW cor. of Section 1,808, T.E.&L. Survey. Gose & Waggoner's No. 1 J. M. Inman, 150 feet north and east of the northwest corner of the M. L. Swing Survey, A-450, and located in the Sarah McKimb Survey, A-493.

Magnolia Petroleum Co.'s No. 13 L. L. Hudson, 510 feet south and 150 feet west of the northeast corner of the south 93 acres of Section 80, Club Ranch Subdivision. Nicholson and others' No. 1 T. L. Hudson, 650 feet south and 450 feet west of the northeast corner of the T. L. Hudson 160-acre tract out of the Thomas Toby Survey, A-644. Rose & Humble Oil & Refining Co.'s No. 1 Charles Abercrombie (J. R. Coody), 150 feet south and 1,581 feet west of the NE cor. of Section 154, Club Ranch Subdivision. The Texas Company's No. 1 D. H. Lorance, 450 feet north and east of the southwest corner of the south 55 acres of the D. H. Lorance 111-acre tract out of the E.L.&R.R. Survey No. 2, A-1,171.

Cooke County

The Texas Company's No. 5 H. L. Dennis, 150 feet south and east of the northwest corner of their 52-acre lease out of the T. J. Hutchinson Survey, A-484.

Eastland County

Kokomo Petroleum Corp. and others' No. 2 T. J. Collins, 990 feet south and west of the NE cor. of the NW of Section 11, Block 1, H.&T.C. Survey. Lloyd Oil Corp.'s No. 14 W. U. Fox, 1,050 feet north and 1,350 feet east of the southwest corner of their 45.2-acre lease out of Section 67, McLennan County School Land Nos. 3 and 4. H. B. Mays and others' No. 1 Tobe Morton, 600 feet north and west of the SE cor. of the SW of Section 9, Block 4, H.&T.C. Survey. W. B. Smith and others' No. 1 L. C. Downtain, 150 feet north and west of the SE cor. of the SW of the NW of Section 11, Block 4, H.&T.C. Survey. McLester Oil Co. and others' No. 6 P. Thorp, 1,660 feet north and 300 feet east of the southwest corner of the P. Thorp 65-acre tract out of the J. R. Stubblefield Survey.

Crane County

Gulf Production Co.'s No. 60 J. T. McElroy, 330 feet north and west of the SE cor. of Section 205, Block F, C.C.S.D. &R.G.N.G.R.R. Survey.

Erath County

Snebold & White's No. 2 J. E. Smith, 420 feet north and 1,835 feet east of the southwest corner of the J. Bishop Survey. Texas Pacific Coal & Oil Co.'s No. 2 W. A. Lattimer, 375 feet north and 400 feet west of the southeast corner of the Samuel Kelly Survey.

Fisher County

Gilman-McMurray & French's No. 1 S. D. Cleveland, 781 feet north and 1,336 feet west of the SE cor. of Section 116, Block 2, H.&T.C. Survey.

Howard County

American Maracaibo Co.'s No. 1 W. R. Settles-D, 330 feet south and 1,650 feet east of the NW cor. of Section 158, Block 29, W.&N.W.R.R. Survey. Cranfill & Reynolds' No. 1 Kloh & Rumsey, 353 feet north and 150 feet west of the SE cor. of Section 3, Block 32, T-2-S, T.&P. Survey. Group 1 Oil Co. and Marland Production Co.'s No. 1 G. W. Overton, 1,650 feet north and 2,310 feet west of the SE cor. of Section 5, Block 32, T-2-S, T.&P. Survey. Humble Oil & Refining Co.'s No. 1 H. R. Clay, 990 feet south and 330 feet east of the NW cor. of Section 138, Block 29, W.&N.W. R.R. Survey. Same company's No. 2 H. R. Clay, 330 feet north and 2,310 feet east of the SW cor. of Section 138, Block 29, W.&N.W.R.R. Survey.

Magnolia Petroleum Co.'s No. 18 Dora Roberts, 405 feet north and 330 feet east of the SW cor. of Section 136, Block 29, W.&N.W.R.R. Survey. Marland Production Co.'s No. 12 H. R. Clay-A, 250 feet south and 1,533 feet west of the NE cor. of Section 139, Block 29, W.&N.W. R.R. Survey. Merrick & Lamb's No. 7 H. R. Clay, 250 feet north and 1,535 feet west of the SE cor. of Section 126, Block 29, W.&N.W.R.R. Survey. Pure Oil Co.'s No. 11 Otis Chalk, 2,310 feet north and 1,060 feet west of the SE cor. of Section 125, Block 29, W.&N.W.R.R. Survey.

Irion County

Sun Oil Co.'s No. 1 Tankersley, 2,128 feet north and 1,173 feet east of the SW cor. of Section 8, G.C.&S.F. Survey, A-1,122.

Jones County

Cosden & Co. and Herbert Oil Co.'s No. 6 C. A. Bickley, 330 feet south and 319 feet east of the NW cor. of the S half of the NW of Section 50, Block 18, T.&P. Survey. M. L. McClanahan and others' No. 1 T. H. Hall, 150 feet north and east of the southwest corner of the T. H. Hall 220-acre tract out of the C.&M.R.R. Co. Survey No. 3, A-521. W. M. McGinley Corp.'s No. 1 C. Whittemore, 660 feet north and west of the SE cor. of the SE of the NE of Section 39, B.B.B.&C. Survey.

Phillips Petroleum Co.'s No. 6 J. C. Mason, 330 feet south and 300 feet west of the NE cor. of the W half of the NE of Section 18, Block 19, T.&P. Survey. Robert Oil Corp.'s No. 8 J. H. Grayson, 2,083 feet north and 330 feet west of the southeast corner of their lease out of Section 13, Block 19, T.&P. Survey. Sedgwick Oil and Gas Co.'s No. 1 J. C. Brown, 660 feet north and 1,320 feet east of the SW cor. of Section 9, Block 1, T.&N.O. Survey. Snowden & McSweeney's No. 6 C. A. Bickley, 330 feet north and 319 feet east of the SW cor.

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of the N half of the NW of Section 50, Block 18, T.&P. Survey.

Loving County

Lockhart & Co.'s No. 1 W. F. Hazell, 2,792 feet southwest of the northeast line and 660 feet northwest of the southeast line of Section 84, Block 33, H.&T.C. Survey. Same company's No. 1 Lepp, 173 feet northwest of the southeast line and 330 feet northeast of the southwest line of Section 91, Block 1, W.&N.W. R.R. Survey.

Montague County

Pure Oil Co.'s No. 7 J. W. Maddox-D, 650 feet north and 200 feet east of the southwest corner of their 91-acre lease "D" out of the John Chambliss Survey, A-123. Pure Oil Co.'s No. 8 J. W. Maddox-D, 1,100 feet north and 200 feet east of the southwest corner of their 91-acre lease "D" out of the John Chambliss Survey, A-123. The Texas Company's No. 7 I. A. Gist and others-"B", 2,298 feet north and 200 feet west of the northwest corner of the C. W. Thompson Survey, A-741, and located in the William Donoho Survey, A-178. Same company's No. 8 I. A. Gist and others-"B", 2,745 feet north and 200 feet west of the northwest corner of the C. W. Thompson Survey, A-741, and located in the William Donoho Survey, A-178. Same company's No. 9 I. A. Gist and others-"B," 1,898 feet north and 200 feet west of the northwest corner of the C. W. Thompson Survey, A-741, and located in the William Donoho Survey, A-178. Same company's No. 2 Mrs. M. H. Salmon-"C," 1,007 feet south and 250 feet west of the northeast corner of the W. P. Zuber Survey, A-887, being 250 feet south and west of the most easterly northeast corner of their 238-acre lease "C." Same company's No. 3 Mrs. M. H. Salmon-"C," 1,070 feet north and 1,375 feet east of the southwest corner of the W. P. Zuber Survey, A-887, being 250 feet south and west of the northeast corner of their 40-acre lease "C."

Palo Pinto County

Upham Gas Co.'s No. 3 J. A. Wharton, 2,900 feet south and 6,200 feet east of the northwest corner of the George Green Survey, A-207.

Pecos County

Buell & Hagan's No. 1 University Land-"B," 330 feet north and 2,310 feet west of the SE cor. of Section 36, Block 18, University Land. Marland Production Co.'s No. 1 William Blakeslee, 330 feet north of the middle of the south line of Section 100, Block 8, H.&G.N. Survey. Mid-Kansas Oil & Gas Co.'s No. 28 I. G. Yates, 811 feet north and 871 feet east of the NW cor. of Section 60, Block 1, I.&G.N. Survey, and located in Section 61.

Shackelford County

Cranfill & Reynolds' No. 1 C. Flippin-D, 450 feet north and east of the SW cor. of the N half of Section 36, Block 11, T.&P. Survey. Earl & Dull's No. 4 J. B. Matthews, 1,150 feet south and 150 feet west of the NE cor. of the SE of the NE of Section 32, Block 10, E.T.R.R. Survey. J. P. Harris' No. 1 C. Flippin, 600 feet south and 175 feet east of the NW cor. of Section 41, Block 11, T.&P. Survey. Ohio-Texas Oil Co.'s No. 12 J. B. Matthews, 1,150 feet south and 150 feet east of the NW cor. of the SW of the NW of Section 29, Block 10, E.T.R.R. Survey.

Roeser & Pendleton's No. 34 W. I. Cook-A, Section 61, 1,939 feet north and 558 feet west of the SE cor. of the SE of Section 61, Block 10, E.T.R.R. Survey. Roeser & Pendleton's No. 7 W. I. Cook-A, Section 83, 2,640 feet south and 635 feet west of the NE cor. of Section 83, Block 10, E.T.R.R. Survey. Same company's No. 1 W. I. Cook-A, Section 88, 230 feet south and 660 feet west of the NE cor. of the SE of Section 88, Block 10, E.T.R.R. Survey.

Simms Petroleum Co.'s No. 4 H. A. Lones, 555 feet south and 600 feet east of the NW cor. of Section 64, Block 11, T.&P. Survey. Same company's No. 5 H. A. Lones, 950 feet south and 600 feet east of the NW cor. of Section 64, Block 11, T.&P. Survey. Tannehill and others' No. 5 J. B. Matthews, Section 27, 500 feet north and 450 feet east of the SW cor. of Section 27, Block 10, E.T.R.R. Survey. Tannehill and others' No. 3 J. B. Matthews, Section 28, 150 feet south and west of the NE cor. of the NW of the NE of Section 28, Block 10, E.T.R.R. Survey. Tannehill Oil Co.'s No. 11 J. B. Matthews, Section 58, 175 feet north and 1,700 feet west of the SE cor. of Section 58, Block 10, E.T.R.R. Survey.

Wichita Production Co.'s No. 5 E. Myer, 190 feet south and 3,000 feet east of the SW cor. of Section 58, Block 10, E.T.R.R. Survey, and located in Section 1, G.H.&H. Survey. Same company's No. 6 E. Myer, 150 feet south and 1,400 feet west of the NE cor. of Section 1, G.H.&H. Survey. Same company's No. 7 E. Myer, 150 feet south and 1,700 feet west of the NE cor. of Section 1, G.H.&H. Survey.

Stephens County

Mesa Oil Co.'s No. 1 T. M. Corbett, 330 feet north and east of the SW cor. of Section 1,094, T.E.&L. Survey. Phillips Petroleum Co.'s No. 1 J. R. Stuard, 993 feet south and east of the northwest corner of the J. B. Stuard 90-acre tract out of Section 27, Block 6, T.&P. Survey.

Wichita County

J. Cable and others' No. 2 H. B. Hines, 2,000 feet north and 638 feet east of the SW cor. of Section 11, H.&G.N. Survey, A-147. Producers Drilling Co.'s No. 2 Allen & Kemp, 150 feet south and 450 feet west of the NE cor. of the S half of Lot 11, Block 26, Kemp Wichita Valley Land. Riner & Omohundro's No. 1 Mrs. N. Michie, 500 feet north and 150 feet east of the SW cor. of the west 39.8 acres of the north 79.8 acres of the N. Michie 104.6-acre tract out of the L. Netherly Survey, A-240.

Ryan Petroleum Corp.'s No. 107 G. L. Nance, 150 feet south and 1,530 feet west of the northeast corner of the G. L. Nance 984.8-acre tract out of the Sam O. Fowler Survey, A-78. Same company's No. 108 G. L. Nance, 150 feet south and 750 feet west of the northeast corner of the G. L. Nance 984.8-acre tract out of the Sam O. Fowler Survey, A-78.

Winkler County

Republic Production Co.'s No. 7 Grisham-Hunter-A, 1,650 feet north and east of the SW cor. of Section 45, Block 20, School Land. Skelly Oil Co.'s No. 1 Fred Leck, 440 feet north and 330 feet east of the SW cor. of Section 22, Block 26, School Land. Southern Crude Oil Purchasing Co.'s No. 2 T. G. Hendricks T-88-J, 440 feet south and 330 feet east of the NW cor. of Section 27, Block 26, School Land. Same company's No. 1 T. G. Hendricks T-88-CX, 440 feet north and 330 feet west of the SE cor. of Section 21, Block 26, School Land. Same company's No. 4 T. G. Hendricks T-88-J, 440 feet south and 1,320 feet west of the NE cor. of Section 9, Block B-12, School Land. Same company's No. 5 T. G. Hendricks T-88-J, 1,320 feet north and 330 feet west of the SE cor. of Section 9, Block 26, School Land.

Wilbarger County

J. B. Baker and others' No. 11 W. T. Waggoner-B, 150 feet south and 3,510 feet west of the NW cor. of Section 5, Block 5, H.&T.C. Survey, and located in the Thomas D. Purnell Survey. Coeden & Co.'s No. 34 W. T. Waggoner-B, 205 feet south and west of the NE cor. of the NW of Section 26, Block 4, H.&T.C. Survey. Fain-McGaha Oil Corp.'s No. 3 W. T. Waggoner-AA, 150 feet south and 490 feet east of the NW cor. of the NE of the SE of Section 18, Block 4, H.&T.C. Survey. Same company's No. 4 W. T. Waggoner-AA, 450 feet south and 150 feet east of the NW cor. of the NE of the SE of Section 18, Block 4, H.&T.C. Survey.

Fain-McGaha Oil Corp.'s No. 2 W. T. Waggoner-DD, 150 feet south and 450 feet west of the NE cor. of the S half of the NW of Section 39, M.E.P.&P. Survey. Same company's No. 3 W. T. Waggoner-DD, 450 feet south and 150 feet west of the NE cor. of the S half of the NW of Section 39, M.E.P.&P. Survey. Lewis Production Co.'s No. 7 W. T. Waggoner, 450 feet south and 155 feet west of the NE cor. of the NW of the SE of Section 18, Block 4, H.&T.C. Survey. Same company's No. 8 W. T. Waggoner, 750 feet south and 155 feet west of the NE cor. of the NW of the SE of Sec-

tion 18, Block 4, H.&T.C. Survey. J. E. McKanna, agent's No. 5 W. T. Waggoner-B, 205 feet north and east of the SW cor. of Section 32, Block 4, H.&T.C. Survey.

Phillips Petroleum Co.'s No. 2 W. T. Waggoner-U, 467 feet north and 200 feet east of the SW cor. of the NE of the NW of Section 44, Block 4, H.&T.C. Survey. Staley-Wynne & Co.'s No. 5 W. T. Waggoner-F, 150 feet south and 457 feet east of the NW cor. of the SE of the SE of Section 32, Block 4, H.&T.C. Survey. Same company's No. 1 W. T. Waggoner-L, 150 feet south and 660 feet west of the NE cor. of the SE of the SW of Section 39, M.E.P.&P. Survey. E. P. Waggoner's No. 1 W. T. Waggoner, 150 feet south and west of the NE cor. of the NW of the SW of Section 18, Block 4, H.&T.C. Survey.

Young County

L. G. Bradstreet Co.'s No. 1 L. A. Snider, 450 feet south and 510 feet east of the northwest corner of the Robert Wilson Survey, A-1,276. Bullington-Lee & Pendleton's No. 7 J. L. Boone, 570 feet north and 30 feet east of the SW cor. of the NW of the NE of Section 1, B.B.B.&C. Survey, A-34. L. T. Burns and others' No. 1 Sullivan and others, 750 feet south and 1,441 feet west of the NE cor. of Section 1,918, T.E.&L. Survey. T. Casey's No. 1 S. Bagley, 1,350 feet northeast of the southwest line and 450 feet southeast of the northwest line of the P. Averett Survey, A-2, being 150 feet southwest of the northeast line and 450 feet southeast of the northwest line of the S. Bagley 100-acre tract.

Fain-McGaha Oil Corp.'s No. 1 R. Campbell-H, 1,165 feet south and 640 feet west of the NE cor. of Section 1,375, T.E.&L. Survey. C. Kleiner and others' No. 27 C. W. Langston, 750 feet south and 1,350 feet west of the NE cor. of the S half of Section 1,490, T.E.&L. Survey. Pennell and others' No. 1 L. R. Drum, 150 feet north and west of the southeast corner of the L. R. Drum 50-acre tract out of the S. Tynes Survey, A-274. E. R. Riggs and others' No. 11 O. L. Sweet, 1,950 feet south and 1,200 feet west of the NE cor. of Section 1,488, T.E.&L. Survey. Wootten & Reed's No. 1 W. H. Dailey, 2,488 feet south and 1,708 feet east of the northwest corner of the S. Tynes Survey, A-274.

Corrected Locations

Howard County—Schermerhorn Oil Co.'s No. 4 Dora Roberts-A, 2,270 feet south and 2,256 feet west of the NE cor. of Section 137, Block 29, W.&N.W.R.R. Survey.

Wilbarger County—Fain-McGaha Oil Corp.'s No. 30 W. T. Waggoner-S, 60 feet south and 450 feet east of the NW cor. of the SW of the NE of Section 24, Block 4, H.&T.C. Survey.

Young County—Wise & Jackson and others' No. 4 R. J. Calvin, 150 south and 850 feet east of the northwest corner of the R. J. Calvin 200-acre tract out of the A. Rohus Survey, A-240. C. C. Williams' No. 1 M. H. Bagley, 1,650 feet northeast of the southwest line and 450 feet southeast of the northwest line of the P. Averett Survey, A-2, being 150 feet northeast of the southwest line and 450 feet southeast of the northwest line of the M. H. Bagley 80-acre tract.

EXTRACT OIL AND GAS FROM SLACK COAL

(Continued from Page 156)

screen test to the product as fed to the retorts as follows:

Through 1/32-in. mesh screen..	25 per cent
Through 1/8-in. mesh screen..	60 per cent
Through 1/4-in. mesh screen..	95 per cent
Through 1/2-in. mesh screen..	100 per cent

The coal in this form permits of complete carbonization and requires the crushing of only about 50 per cent of the raw coal received from the mine. Thus the advantage of using mine slack, which not only reduces the amount of crushing necessary to put it in a form to be properly carbonized, but also gives the opportunity of using a mine product which now has a very low market value as compared with mine run coal.

The average yield of products from a ton (2,000 pounds) of this coal is as follows:

Char	1,430 pounds
Tar oil	29 gallons
Light oil	2.1 gallons
Gas (800 B.t.u. value)	3,750 cu.ft.

The char or solid product contains little moisture and is of a light friable character which is readily crushed in preparation for briquetting or pulverized fuel firing.

Oil and Gas Recovery

Light oil recovery from the gas by scrubbing methods averages two gallons per ton of coal processed, has a specific gravity of 0.780 at 60 degrees Fahrenheit, is practically nonaromatic and contains cyclic saturated and unsaturated hydrocarbons which make it valuable as a motor fuel.

The gas produced has a calorific value of approximately 800 B.t.u. after having been scrubbed of the light oil content and has a specific gravity of 0.699 at 60 degrees Fahrenheit. The analysis of gas samples gives the following, as its typical character:

Hydrogen sulphide	4.4 per cent
Carbon dioxide	5.6 per cent
Carbon monoxide	6.0 per cent
Oxygen	1.8 per cent
Hydrogen	25.8 per cent
Methane and ethane	39.3 per cent
Illuminants	6.1 per cent
Nitrogen (difference)	11.1 per cent
	100.0 per cent

As a total of 3,750 cubic feet of this gas is produced per ton of coal processed, a total of 3,000,000 B.t.u. heating value is thus available for plant used. The requirement for the carbonizing in the present retorts amounts to 2,000,000 to 2,400,000 B.t.u. leaving a remainder of 600,000 to 1,000,000 B.t.u. for steam raising purposes.

A still is installed at the plant for the fractionating of the crude tar into light, medium and heavy oil, which is marketed as such, the pitch remainder being used as a binder for the briquetting of the char.

The briquettes, which are pillow shaped, weigh approximately 2½ ounces each, and are formed in Belgium type rolls, after which they are air dried with the result that they are in a form to stand the handling through shipment and delivery to the consumers' bins with little degradation.

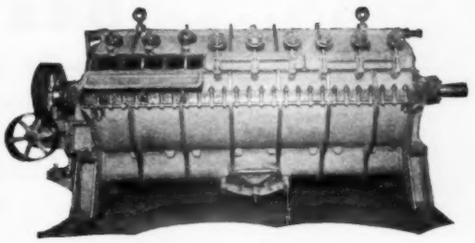
The briquettes burn with little or no smoke and retain their form until entirely consumed. Combustion is readily controlled and they burn without forming clinker.

Raw Material Cheap

Screenings or so-called slack coal, which is produced in the bituminous coal mining industry, constitutes 20 to 35 per cent of the output of the average mine; and as the market value of this product is, in many cases, lower than the mining cost, it is in most cases a deciding factor as to whether a property may be operated at a profit or a loss. The conversion of this grade of coal to a form of higher value by means of low temperature carbonization, presents an opportunity for realizing a just return for the fuel value of the screenings. The solid and liquid products are in such a form as to be readily transported to the market; and economies realizable from locating a plant directly upon the mine property make this industry especially inviting to the bituminous coal mine operator.

Located in municipalities, the process may be operated in conjunction with the present city gas plants, in which case furnaces would be fired with producer gas, thus making the char gas produced available for use as an enriching medium for uncarburetted water gas, and effecting a saving of the value of the oil now used for carburetting.

Recent tests have shown marked advantages for the use of low temperature char in pulverized form for large power-plant use, and this presents a means of obtaining a cheaper fuel for the raising of steam if the value of the tar and gas be credited to the plant operation.



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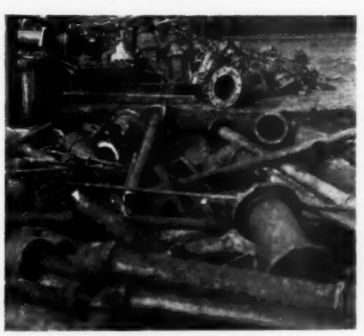

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Especially designed and made for use in oil field service

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Due to simplicity of *American Bearing* design, installing them is quite simple and may be compared to the method of installing a plain bearing. A complete bearing is composed of three separate parts—the sleeve, casing and cage. The sleeve is fitted on the shaft by means of a light press fit, or heated in oil and allowed to shrink in its position. The casing is pressed into the bore of the housing under a light press fit. These parts can then be laid aside until wanted for general assembly of the machine in which they are used. Adjusting shims are not needed Neither are threaded housing closures. Housing borings are straight and require minimum diameters. Special designs are unnecessary.

Non-Adjustment

American Bearings never require adjustments after installation—a feature of unusual advantage. Adjustment is entirely dispensed with by design which makes installing them incorrectly impossible.

Heavy Duty Steel

The steel of which these Bearings are made has exceptionally uniform distribution of strength throughout the walls and superability to resist wear. *American Bearing* Steel is made only in small quantities, in small electric furnaces—always subject to exact control. Its inspections are rigid. Its tests are thorough. If a shade away from prescribed strict and narrow limits, it is not used. Better steel in Roller Bearing products is not known to the trade, and rarely equalled.

Get them in the first place: Use them to replace plain bearings

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The three construction units—cage, sleeve and casing—are calculated to obtain maximum load-carrying capacity with a simplicity of design that distributes the load evenly over every surface and avoids all causes of wear.

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In simplicity and strength of design, and in the superior special self-hardening steel, *Americans* are equipped to *kill* friction. The straight-line construction reduces power loss to the greatest extent that such loss may be eliminated. Any bearing is rated primarily on its capacity for friction elimination. On this basis, *Americans* are unexcelled.

Users and Uses

These manufacturers have discovered and capitalized their products with the merits of *American Bearings:* American Well and Prospecting Company, Boykin Machinery Supply Co., Hopper Machine Works, Latex Iron and Steel Works, Inc., Lee C. Moore Co., Lucey Manufacturing Corporation, Oil Well Supply Company, Star Drilling Machine Co., Portable Rotary Rig Co.—and have adopted them as standard for the heaviest types of Crown Blocks, Traveling Blocks, Draw Works, Rotary Drives, Clutch Pulleys, Pumping Units, Swivels, and other drilling equipment of their manufacture.

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ROLLER BEARINGS

Of Interest to Sales Departments

VACUUM TO ENTER RETAIL MARKETS WITH STATIONS

The Vacuum Oil Co. will shortly enter the retail marketing business in eastern states, according to present plans. The company in the past has confined its marketing activities largely to the sale of lubricating oils for which it has a world-wide demand. The company in recent years has had two subsidiary retail marketing organizations—the Metro Stations, Inc., and Ray Oil Co.—but the operations of these companies were not directly connected to the Vacuum company and did not operate under the name of the Vacuum Oil Co. These two marketing companies had stations in New York State.

Under the new plan the Vacuum Oil Co. will enter the retail business direct. The company has two refineries in the United States, one being located at Olean, N. Y., and the other at Paulsboro, N. J. Gasoline and other products will be available from these refineries. It is assumed for the present at least the Vacuum distribution will be confined to consuming areas near the refineries.

The company, it is said, does not contemplate any distribution of gasoline and other products outside of lubricating oils, on a national scale. The company's lubricating oils are now widely distributed by independent jobbing interests. The company has the largest sales of lubricating oil among industries of any company in the United States.

ETHYL GASOLINE DEMAND NEARS BILLION GALLONS

The sale of Ethyl gasoline in 1928 totaled 800,000,000 gallons according to information from the Ethyl Gasoline Corp. This total is approximately equal to the total consumption of gasoline in Great Britain and about 7 per cent of the total consumption in the United States.

The Ethyl Gasoline Corp. during the past year has made progress in the sale of its product in foreign countries. A. M. Maxwell, who will become vice president and general sales manager of the Standard Oil Co. of Ohio on February 15, is now vice president of the Ethyl Gasoline Corp. He recently returned from Europe where he has been engaged in the introduction of Ethyl gasoline in Great Britain and the continent.

NEW FUEL OIL DISTRIBUTORS

CHICAGO, Feb. 9.—The Verco Fuel Oil Corp., 3711 South California Avenue, has been organized to distribute petroleum products in this city. It will be incorporated under the laws of Illinois for $150,000. The members of the new organization are I. M. Lasseter, William J. Vercoe and F. L. Freeland.

JOBBERS INCORPORATE

CHICAGO, Feb. 9.—Anderson & Foley, who are distributors of petroleum products at Rockford, Ill., have incorporated their business as the Anderson & Foley Oil Co., with a capital of $30,000. No change in the conduct of the business is contemplated.

MOVE CHICAGO OFFICES

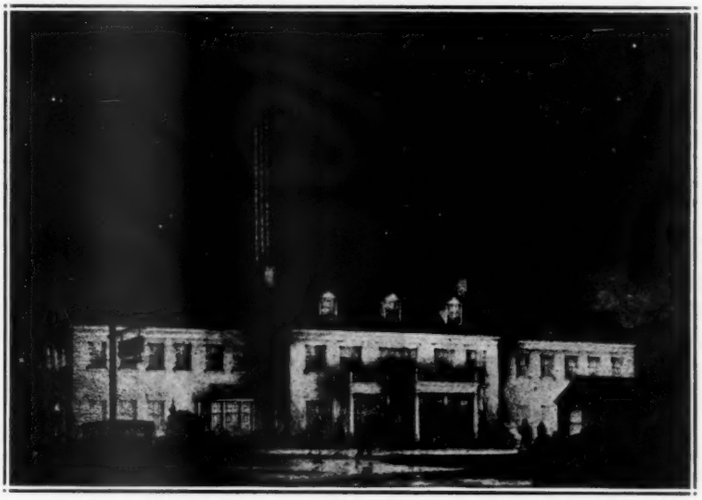
CHICAGO, Feb. 9.—The George C. Peterson Co., important distributor of petroleum products in Chicago and nearby towns, has moved its offices from 208 S. LaSalle Street, to its new bulk plant at 2006 Elston Avenue. It operates large stations on Sheridan Road, this city, and at Waukegan, Elgin, Joliet and other cities. It has been running the small refinery at Joliet, taking the product.

PIERCE PROVIDES FOR EXTENSION OF COMPLETE SERVICE TO TOURISTS

Provision for the further extension of the complete service for motorists along Highway 66 extending from St. Louis to Los Angeles was provided by the Pierce Petroleum Corp. during the past two weeks in the purchase of station, restaurant and hotel sites near Tulsa, and Miami, Okla. The Pierce corporation inaugurated this service last year when in addition to its regular station service the corporation built a large, modern restaurant for the tourist trade at Rollo, Mo.

The Rollo venture proved successful and the Pierce corporation now has plans which will ultimately extend the service from New York to Los Angeles along Federal Highways 40 and 66. In addition to the restaurant and station service the corporation plans a chain of hotels for tourists. The first hotel is now under construction at Rollo and late in 1929 and in 1930 it is expected that additional hotels will be built along the highways.

Service stations and restaurants of a design corresponding to those in operation at Rollo will be built at several points this year, including the Tulsa and Miami sites, recently purchased. It is planned to have the hotels and stations about 125 miles apart, providing every service required by tourists in their cross-country trips.



Highway terminal building of Pierce Petroleum Corp. under construction 9 miles east of Tulsa. Similar buildings being built 1 mile east of Miami, Okla., and 1 mile west of Columbia, Mo.

The restaurant building near Tulsa will be of the colonial type of architecture and will consist of basement, two floors and attic. The rest rooms in this building, according to E. D. Levy, president of the Pierce Petroleum Corp., will be more elaborate and more gorgeous in their equipment than is to be found in any hotel in New York City. The result to be demonstrated here is the effect of 18 months' careful study of the entire proposition.

On the ground floor of the restaurant is a waiting room 50 feet long and 35 feet wide with open fireplaces at one end and equipped with tables and chairs to accommodate 50 people. In the rear will be a bar for solt drinks and sandwiches. To the left are three rest rooms for women. The first is a French renaissance room. Then comes the women's toilet, the floor of which will be inlaid rubber and walls white marble and chromium. To the left of the French room is another rest room and emergency hospital equipped with three slender hospital beds, white table and white chair. In the center is a standard hospital operating table. A cabinet containing all surgical implements, appliances and supplies necessary for a wayside operation is placed in the wall. This room has a double door so that an ambulance may have easy access. A trained nurse will be in constant attendance. Either sex may receive treatment here.

Complete Service

To the right of the waiting room will be the men's toilets as elaborately equipped as that for the women, manager's office and dining room and toilet for negro chauffeurs.

On the second floor will be a dining room with a seating capacity of 190 persons and equipped with radio, Victrola and grand piano. This can also be used for dances. It is built so that one-half can be closed off to accommodate bridge luncheons and club dinners.

An apartment for the manager and his family will be located on the third floor. In the basement will be a modern steam laundry.

When fully developed the Tulsa project will comprise the restaurant and four hotel units.

The hotel unit now under construction at Rollo, Mo., contains 40 guest rooms, accommodations for 40 cars and rooms for the chauffeur and other attendants, being the first of its kind in the country. The design is colonial to match the main building. The first floor is garage, with the hotel rooms on the second and third floors. The room units have bedrooms with two double beds and clothes locker, dressing room and bath. Equipment is provided for light laundry with electric drier in the wall, ironing board and electric iron.

Rates as announced by Mr. Levy will be $4 for one person, $6 for two persons $8 for three persons and $10 for four persons. Service will include a thorough cleaning of the guest's car without extra charge.

Room sales will be handled the same as Pullman berths in trains. The guest leaving one hotel in the morning can purchase room accommodations where he expects to spend the night and can occupy them without even the formality of registering.

BILL WOULD LICENSE ALL DEALERS IN TEXAS

A bill which is said to have the sponsorship of the Attorney General's department has been introduced in the Legislature of Texas providing that all distributors must secure licenses from the State Comptroller. The applicant must make a surety bond of not less than $1,000 and not more than $50,000, the latter being intended for wholesalers and refiners.

The retailer can have his bond reduced monthly by keeping it at three times the amount of the tax for the preceding month. The bill provides for an increase in tax from 2 to 4 cents.

Many firms along the borders of the State have been buying gasoline outside of Texas and selling it in Texas without paying of the tax, now 2 cents a gallon. They have cheap fixtures, and if the Comptroller takes action they can go out of business and start anew under a different corporate name. A total of $78,000 was collected from one firm recently and $12,000 from another. With the registration and licensing system the Comptroller would have a record of all stations and be able to check them. The bill requires the stations to keep a record of their sales in a "bound volume" and inveighs against any loose-leaf book.

OHIO STANDARD EXPANDS MARKETS OUTSIDE STATE

The first definite proof that the Standard Oil Co. of Ohio would follow the lead of other Standard groups and market refinery products outside its usual marketing territory, was given during the past week when the Ohio company purchased the bulk stations of Spears & Riddle at Wheeling, W. Va. The Ohio Standard in the past has confined its marketing to the State of Ohio.

Other Standard companies through subsidiary companies have entered Ohio with their bulk and retail stations and it has been assumed that the Ohio Standard would sooner or later find its expedient to enlarge its marketing territory. Wheeling is located in what is commonly considered the marketing territory of the Standard Oil Co. of New Jersey.

The bulk station at Wheeling can be served from the refinery which the Latonia Refining Co. (subsidiary of the Standard of Ohio) is building at Latonia, Ky. This refinery which will have a capacity of 5,000 bbls. daily will be ready to operate by summer.

FAVORS GASOLINE TAX

At their convention the co-operative organizations of farmers in Illinois went on record in favor of a gasoline tax but opposed the use of the funds for the building of wider roads into the city until a larger proportion of the farms are provided with hard roads. It was claimed 82 per cent of the people in the State do not live on hard roads and until more farms are reached by good roads the organizations do not want the money collected from the gasoline tax used for the chief benefit of the city population.

OPENS CHICAGO OFFICE

CHICAGO, Feb. 9.—Harry E. McCormick has moved his offices from the First National Bank Building to Room 938 Transportation Building where he will continue as a marketer of petroleum products under his own name. He has been managing the Petroleum Division of the Continental Credit Co. in the First National Bank Building.

"IWANA" Hair Belting

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TULSA, OKLA.

Colombian Congress And President Mendez To Adjust Disputes

NEW YORK, Feb. 9.—According to reports from Colombia, various disputes between the government of that country and American oil interests, which have retarded Colombian oil development for several years back, may be ironed out at a special session of the Colombian Congress.

The new Montalvo-Gulf Oil contract, covering part of the lands of the suspended Barco concession, and the Montalvo-Tropical Oil Co. agreement, amending the De Mares concessions and including a working agreement between the Andian National Pipe Line and the Colombian government, will probably be adjusted at this special session.

According to news dispatches from Colombia, the contract being worked out includes the construction of a pipe line by Gulf Oil interests through Colombia and a 50-year contract for the development of approximately 1,000,000 acres which were in the original Barco concession. It is reported that the Colombian government will get a royalty interest approximating 20 per cent and that some payments will also be made to the Barco heirs. The Gulf Oil Corp. will own a 75 per cent interest in the new concession, and the Carib Syndicate will hold the remaining 25 per cent.

The contract covering the De Mares concession, it is reported, includes the extension of the concession indefinitely, or as long as oil is produced in commercial quantities. Under the terms of the old agreement the concession would have expired within a few years. Under the terms of the new contract, it is reported, the royalty is expected to be increased from 10 per cent to about 20 per cent, with some adjustment to be made in the manner in which the government will receive and dispose of its royalty oil.

President Miguel Abadia Mendez, in his message, speaking of the oil situation, said: "Very soon special legislation will be enacted to cover the subject of oil, which will define and guarantee rights of everyone on the basis of rigid respect for private property and the legitimate exploitation of the oil reserves of the state, so that there will be no occasion to fear confiscation or that royalties will be so onerous as to kill this source of fiscal revenue.

"The government will maintain in its entirety its traditional policy of welcoming foreign capital and enterprises, and there will be no authority or public power in Colombia that will not give them the fullest protection to the same extent to which it is given Colombian capital and industry."

CENTRAL WEST FIELDS

(Continued from Page 68)

In Meigs County, Sutton Township, the Davis Oil Co.'s No. 6 Giles Hysel and others farm, Section 20, produced an initial production of 8 bbls. from the first Berea sand at from 1,892-1,905 feet. Pure Oil Co. is drilling No. 5 W. J. Crater, Section 19. The Wehrle Co. is drilling a second test on the David B. Cross, Section 17, and Tyree and others are drilling No. 7 H. D. Carnahan, Section 11.

Jackson County

In Jackson County, the Ohio Fuel Gas Co.'s No. 3-3,322 on the Ida E. Jones, Section 22, is a light gas well in the Clinton at from 2,572-84 feet, total depth drilled 2,589 feet. Same company is drilling No. 1-3,361 on the W. F. Black, same section, also No. 1-3,360 on the M. C. Eubanks, Section 23. In Lick Township, the same company is drilling No. 1-3,363 on the L. T. Rice, Section 13.

In Gallia County, Addison Township, the Atha Drilling Co. got an average gas well on the Marilla Miller, Section 20.

In Guernsey County, Spencer Township, J. E. Patton and others are drilling on the Marshall Stone heirs, Section 18.

Monroe County reported no comp tions. In Marion Township, the Pe Contracting Co. is drilling a second te on the C. A. Ewart, in fractional Se tion 5. The Ohio Fuel Gas Co. is dri ing deeper No. 1-2,760 on the Edwa Hammond, fractional Section 34. In Pe Township, the Penn Oil & Gas Co. drilling No. 12 on the Dennis Benjamin Section 11.

INDIANA-ILLINOIS

No completions were reported fro any part of Indiana, but several wel scattered over the State are near t producing sands and may be brought i soon, if weather conditions will allow t work to continue.

In southwestern Illinois another we has been completed in Sugar Loaf Town ship, St. Clair County, by Petty an Olenburg, being a test 500 feet from th south line and 200 feet from the eas line of what is known as the Northwes Survey No. 429, which showed an initia production of 12 bbls. at a depth of 62 feet. This makes three producing well for St. Clair County out of four well drilled, which is very good for a purel wildcat proposition.

Another section of Illinois is attract ing attention, that which is called th Harrisburg Field, in Saline County, i the southeastern part of the State, where a month or so ago a well was drilled an reported good for from 60 to 80 bbls initial. A large portion of the county ha been taken under lease, mostly by Ken tucky parties, although some of the large operators and companies have secured blocks for test work. This new develop ment is a considerable distance to the south from the Wabash County, Illinois area where excellent production has been found in the Allendale Field, and directly west from the Owensboro-Hartford Field of Kentucky. The adjoining county to the east of Saline, which lies between Saline County and the Ohio River, is Gallatin County, which looks very good with Shawneetown as the river town of the county, from whence oil could be barged either up or down the Ohio River.

KENTUCKY-TENNESSEE

(Continued from Page 68)

County Field of Kentucky, are moving an oil rig to a location in the Harrisburg Field on the Smith farm, southeast of Harrisburg and will drill a test. Kentucky operators hold large blocks of acreage in Saline County.

Ohio County

"Lucky" Jim Thomas, production manager for James C. Ellis, states that Mr. Ellis' No. 3 on the Marvin Moseley farm made 280 bbls. in 24 hours and is rated by him as one of the best wells in Ohio County at this time. This well is 1½ miles east of the Ambrose-Weller Pool.

James C. Ellis is reported to have completed No. 8, 9 and 10 on the Mary Cundiff farm, east of the Weller Pool rated good for 40, 40 and 50 bbls. respectively, with Nos. 11 and 12 starting drilling.

Arnold and others found a dry hole on the Baker Brothers' farm, in the Sunnydale section of the county.

Newton, Fields and others drilled a dry hole on the D. A. Hendricks 57 acres, southwest of Friendship Church.

Doctor Sirman's No. 1, on the Friendship School lot near the Friendship Church area, is rated at 100 bbls. initial production.

In the Friendship area, the Wood Oil Co.'s Nos. 7 and 8 on the J. W. Mattox farm, are rated good for 10 and 15 bbls., respectively, with No. 9 drilling.

In the Sunnydale Field, Fisher and Smith have a dry hole in a test on the J. W. Thomas 22 acres, at 555 feet. Sunnydale Oil & Gas Co. also has a dry hole in No. 8 on the Mark Renfrew 140 acres, at 385 feet. J. S. Patton's No. 5 on the Mark Renfrew farm, same field, is a fine gas producer.

Daviess County Wells

Daviess County was hard hit with dry holes as there were 14 dusters out of 21 completions.

In the Hayden Pool, L. C. Young drilled in Nos. 7 and 8 on the K. N. Yeiser farm, with initial production of

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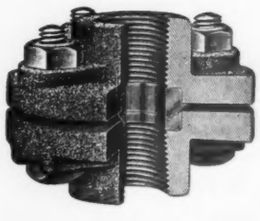

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55 and 25 bbls. respectively, while his No. 1 on the William Yeiser farm, same pool, was dry.

Eastern Gulf Oil Co.'s No. 4 on the M. C. Ruby 125 acres, produced 30 bbls. initially, and No. 1 on the Joe McMahon farm, for the same company was dry.

Huff, Calderwood and others' No. 2 on the W. A. McCandless farm, in the Burton Pool, was dry, as were their No. 1 on the Delmar Sharp farm.

McMahon & Dalghren have a duster in No. 3 on the Fuqua farm, in the Jones Pool, southwest of Whitesville. Same company's No. 2 on the Frank Fuqua farm, same pool, is reported at 30 bbls.

Imperial Oil & Gas Products Co.'s No. 5 James Hayden farm, in the Hayden Pool, produced 12 bbls. initially, with No. 6 drilling.

McHenry and others' Nos. 1 and 2 on the W. D. Neal farm, north of Whitesville are both reported dusters.

Jetson Oil Co.'s No. 1 S. Hinton, in the Jones Pool, is reported at 40 bbls. initially, with No. 2 under way. M. B. French and others' No. 6 L. R. Howard farm, same pool, proved a duster.

Laly, Lowman and others' test on the Edward Boman lease is reported a dry hole. Goldburg, Garrison and Young have a dry hole on the Lucy May farm.

Creek Drilling Co.'s No. 8 on the Alvey Tylor 56 acres, in the Brown Pool, near Utica, is reported dry, which is something new for that productive piece of territory.

James E. Ellis' second test on the Joe Anderson farm, in the Burton Pool, was dry, as was the first test made on the lease.

Wood Oil Co., Inc., drilled a dry hole in a second test on the William Tanner farm, in the Red Hill Pool. Hunt and others got a dry hole on the Tack Walker farm, in the Jones Pool, and the Whitmer Oil & Gas Co.'s second well on the Alford Sutton farm, produced 12 bbls. initially.

Scattered Completions

Three miles west of Bowling Green, in Warren County, the McGinley-Randall Supply Co. drilled a dry hole in No. 3 on the W. L. Seibert 50 acres, at a depth of 450 feet. The well is in the southeast corner of the lease.

Snowden-McSweeney Co.'s No. 35 on the T. J. Oliver farm, in the Gainesville area of the Scottsville Field, in northeastern Allen County, was dry at 466 feet. This is one of the old producing leases of the county. Harley and Coatsworth are drilling No. 3 on the D. Welch farm, same field.

The Ohio Oil Co. will abandon its test on the J. B. Jackson farm, on the Weir Road, 3 miles from Greenville, in Muhlenburg County, as it does not show enough production to pump.

The Petroleum Exploration Co. drilled in a dry hole on the Arthur Deckard farm in Hardin County. Same company is drilling on the R. H. Ditto farm, same county.

Field Pickups

The Cumberland Petroleum Co. has bought the holdings of Daly and Lowman adjoining the Widow Salmon, on the eastern edge of the Burton Pool, in Daviess County, but not the Burton lease itself. Three good wells now are pumping in the Burton lease, the last the best of the lot.

Another large block of leases has been filed in the county clerk's office in Owensboro, the county seat of Daviess County, embracing about 750 acres, 4 miles east of Owensboro, the leases being under the name of W. C. Scott. Drilling is to be started soon on the block, and the claim is the prospects are good for gas wells, as well as oil, but this must be found out by the drill.

The Cumberland Petroleum Co. has started work on its second test on the S. H. Easton farm, in the Burton Pool of Daviess County.

The Sidney Oil Co. expects to start three tests shortly on a block of 2,600 acres of leases, 4 miles west of Owensboro, and from the Berry Road north to the Roost Road, in Daviess County and work will start on a test to go down 1,700 feet, as soon as the material can be put on the ground. This is a good

$3,200.00 saved—plus 15 days of "flush"

Nothing like knowing *real facts*. To determine drilling costs with various tools, the Reed Drilling Company made one well in Seminole with rock cones. The bit cost was a fraction over $6,000.00 and it required 48 drilling days.

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K-P *Straight Hole* Bits saved $3,200.00 *and made the well in 33 drilling days*—but most important, the hole was *straight*—true to gauge—every foot of the way down.

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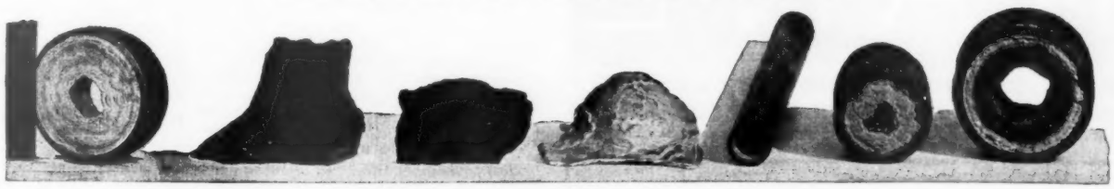

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prospect for the opening up of a gas field.

Petroleum Exploration Co. has started its second test on the V. M. Barrett, in the Jones Pool, southwest of Whitesville, in Daviess County.

The Illinois Pipe Line Co. loaded three tank barges of oil at Doyle Station, just off Owensboro, for water shipment to Louisville, last Saturday. The Producers Pipe Line Co. also loaded three river barges for shipment to Louisville, which means that approximately 30,000 bbls. of crude was on its way to two Louisville refining plants, as each barge holds about 5,000 bbls.

Dexter Pratt and others that were making an effort to open an oil field in Hopkins County for a Texas company, have, according to advices, got enough of it for the time being, as they were unable to find the product in commerical quantity.

The Petroleum Co. is reported to be starting a well on the C. A. Page farm, adjoining the Ratliff farm, in McLean County, where Dimmick Brothers secured a fairly good producer.

SEVERANCE TAX TEST BEFORE SUPREME COURT

WASHINGTON, D. C., Feb. 9.—The Louisiana statute, imposing a "severance tax" on petroleum taken from the soil and based on the gravity of the oil, is before the Supreme Court of the United States in order that the constitutionality of this law may be passed upon.

This case was brought to the Supreme Court by the Ohio Oil Co. which has filed a petition for a writ of certiorari in its case against the State of Louisiana. The Ohio company does not challenge the right of the State to levy a "severance tax" but the assessment of the tax based on the gravity of the oil produced is declared to be purely arbitrary and creates an intentional discrimination.

Counsel for the Ohio Oil Co. declares that the oil fields of southern Louisiana produce only asphalt-base oil, the brief points out, while the fields of northern Louisiana produce paraffin-base oil. The value of the asphalt-base oil tends to increase as the gravity decreases, the brief adds, while the price of paraffin-base oil increases as the gravity increases, so that the statute as it now stands does not bear any relation to the value of the oil extracted and is thus purely arbitrary and does not give to appellant the equal protection of the laws.

ABANDON PERU CONCESSION

It is stated that the American oil interests which hold the exploration rights to the National Petroleum Reserve in northern Peru have withdrawn their concession and will not endeavor to exploit the oil of this region. The terms of this consession granted the company the right to explore 1,000,000 acres of the National Petroleum Reserve, directly to the south of the producing fields of the International Petroleum Co. The holders of the concessions have had experts in the field since last summer, and it was long considered that rich deposits lay in those fields. No official confirmation has been received, but it is now understood, says United States Vice Consul Samuel Reber, Jr., at Callo-Lima, the concession, valid for 18 months from February, 1928, will be allowed to lapse. It is generally believed the present price of oil in world markets is the controlling factor. The withdrawal of this company again leaves the International holding a practical monopoly of all Peruvian oil exploitation. In 1927 its production amounted to 7,768,140 bbls., out of a total of 10,134,971 bbls. produced in the country.

LELAND E. FISKE

Certified Public Accountant (Indiana)
Valuation Engineer

216 Atlas Life Bldg., Tulsa, Okla.

Specialist in Oil Property Taxation, Appraisal and Accounting

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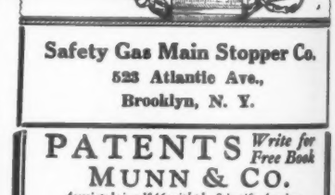

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TEXAS OIL MAPS

County and District Catalog on Application

HEYDRICK MAPPING COMPANY

Wichita Falls, Texas

Detailed Operations in All Fields for Month of January

SUMMARY OF ALL FIELDS
Wells Completed in January

	Comp.	Prod.	Dry	Gas
Eastern	329	1,826	29	53
Lima	8	92	2	0
Central Ohio	82	517	26	35
Michigan	37	6,630	15	7
Kentucky	108	1,446	45	2
Tennessee	1	...	1	0
Indiana	12	121	4	2
Illinois	16	511	5	1
Kansas	50	2,977	19	7
Oklahoma	302	107,386	113	21
North Central Tex.	286	14,789	131	9
East Central Tex.	10	...	10	0
East Texas	9	...	3	6
West Texas	112	315,065	19	0
Texas Panhandle	26	6,581	1	5
Gulf Coast	126	45,897	44	1
Southwest Texas	123	18,842	39	13
North Louisiana	32	218	11	17
Arkansas	28	4,122	9	5
Montana	26	2,508	3	0
Wyoming	4	651	1	0
Colorado	5	1,048	1	0
New Mexico	5	...	4	1
Utah	2	...	2	0
Total January	1,739	531,227	537	185
Total December	1,811	496,215	599	234
Difference	72	35,012	62	49

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Eastern	93	309	402
Lima	6	21	27
Central Ohio	78	155	233
Michigan	72	79	151
Kentucky	14	168	182
Tennessee	3	16	19
Alabama	0	7	7
Mississippi	7	23	30
Indiana	3	42	45
Illinois	3	12	15
Kansas	63	284	347
Oklahoma	169	865	1,034
North Central Texas	104	417	521
East Central Texas	5	14	19
East Texas	6	17	23
West Texas	75	303	378
Texas Panhandle	37	118	155
Gulf Coast	45	178	223
Southwest Texas	49	173	222
North Louisiana	34	83	117
Arkansas	20	59	79
Montana	20	105	125
Wyoming	28	144	172
Colorado	9	75	84
New Mexico	21	80	101
Utah	3	30	33
Total January	967	3,777	4,744
Total December	893	3,874	4,767
Difference	74	97	23

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carter	6	145	1	1
Creek	30	1,637	10	4
Grady	6	...	1	1
Kay	12	35	9	2
Kiowa	11	83	9	..
Logan	9	11,598	3	..
Muskogee	12	370	4	1
Okfuskee	11	905	2	1
Okmulgee	20	611	11	2
Osage	24	1,558	10	..
Pontotoc	7	620	3	1
Pottawatomie	62	55,780	7	..
Seminole	41	25,522	12	1
Stephens	12	581	5	1
Wagoner	9	...	5	4
Miscellaneous	30	7,941	21	2
Total Jan.	302	107,386	113	21
Total Dec.	272	80,311	87	24
Difference	30	27,075	26	3

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Carter	2	21	23
Creek	20	75	95
Grady	1	12	13
Grant	1	9	10
Hughes	1	11	12
Kay	...	15	15
Kiowa	...	15	15
Logan	3	20	23
Muskogee	5	30	35
Oklahoma	5	9	14
Okfuskee	10	27	37
Okmulgee	11	24	35
Osage	12	36	48
Pawnee	2	7	9
Payne and Lincoln	4	16	20
Pontotoc	9	26	35
Pottawatomie	29	158	187
Seminole	26	232	258
Stephens	9	29	38
Wagoner	2	11	13
Miscellaneous	11	82	93
Total January	169	865	1,034
Total December	178	855	1,033
Difference	9	10	1

WELLS COMPLETED
CREEK COUNTY

6-19-7 Anthis, Silurian Oil & Houston Oil 1 110
28-19-9 Crawford, Gled Oil Co. 1 .... dry
26-18-7 Jones, Shaffer O. & R. Co. 1.. dry
21-17-7 Lewis, Magnolia Pet. Co. 9 5
22-17-12 Hutching, Roxaline Pet. Co. 1-A ..... gas
22-17-12 Stewart, Winemiller Oil Corp. 1 ..... dry
7-15-7 Jones, Shell Pet. Corp. 1 ..... dry
22-15-7 Thomas, Atlantic O. P. Co. 1 dry
17-17-7 Tiger, Bengal Oil Co. 7 135
Tiger, Bengal Oil Co. 8 700
16-18-7 Coker, Magnolia Pet. Co. 33.. 30
17-18-7 Vidaway, Magnolia Pet. Co. 12 60
17-17-7 Tiger, Pine & Smith 1-A 50
7-15-7 Talamase, J. W. Henry et al 1 dry
7-19-7 Hall, Prairie O. & G. Co. 1... dry
6-19-7 Deere, Kingwood Oil Co. et al 1 200
7-19-9 Tahkaney, Dixie Oil Co. 4 .... gas
4-18-7 Atkins, Sand Springs Home 28 25
25-18-9 Beavers, Roach et al 3 15
10-17-10 Hay, Central Commercial Oil Co. 1 ..... gas
13-17-10 Fulsom, Pontiac Oil Co. 6.... 7
25-17-10 Goody, Fox & Irelan 2 20
3-17-11 Townlot, G. Collins 1-A 10
21-16-8 Arsayles, Peters Pet. Co. 4. 150
1-16-9 Ralston, Flynn & Morgan 1.. dry
4-16-9 Sewell, O'Rourke Bros. et al 1 dry
6-15-7 Wattie, Magnolia Pet. Co. & Billingslea 2 ..... dry
15-15-8 Barnett, Twin State Oil Co. 1. 20
29-15-9 Carmen, C. G. Tibbens 3 .... gas
6-14-9 Long, Shaffer O. & R. Co. 3 .. 90

Wells completed 30
Production 1637
Dry 10
Gas 4
Gas production 10,250,000

CARTER COUNTY

22-1s-3w Crockett, Schermerhorn Oil et al 7 40
29-2s-3w Dougherty, Sinclair O. & G. Co. 5 ..... gas
18-1s-3w Dixon, Max Westheimer 2.... 5
33-1s-3w E. Cox, Magnolia Pet. Co. 1.. 50
19-1s-3w Winters, Magnolia Pet. Co. 3 dry
29-1s-3w Ratliff, Magnolia Pet. Co. 1.. 50

Wells completed 6
Production 145
Dry 1
Gas 1
Gas production 39,000,000

GRADY COUNTY

23- 5-8w Edmundson, Oklahoma Natural Gas Corp. 4 ..... gas
27- 5-8w Chandler, Oklahoma Gas Utilities Corp. 5 ..... gas
14- 4-8w Pettitt, Twin State Oil Co. 3. dry
23- 4-8w Kerans, Champlin Ref. Co. 1. gas
23- 5-8w S. Farwell, Magnolia Pet. Co. 9 ..... gas
36- 5-8w School land, Oklahoma Gas Utilities Corp. 5 ..... gas

Wells completed 6
Dry 1
Gas 5
Gas production 94,500,000

KAY COUNTY

36-28-1w School land No. 76, Ingram & Wilson 2 ..... dry
14-27-1 Meuret, D. J. Wilson 2 ..... dry
23-27-1 Willegrube, Ingram & Wilson 1 dry
14-29-1 Stalnaker, Lario O. & G. 1.... dry
14-27-1 Myer, Wilson & Wright 2..... dry
21-27-1 Binney, C. A. Leonard and H. A. G. Oil 3 ..... gas
18-25-2 Hall, Marland Prod. Co. 3.... 35
24-27-1 Gilbert, Wilson et al 1.. gas
18-29-1 Mefford, Carter Oil and Ona Oil 1 ..... dry
Cole, Tidal Oil 4 ..... dry
19-27-1w Gaylor, D. Early et al 2-A.. dry
34-27-3 Weedin, Mummert Drlg. Co. et al 1 ..... dry

Wells completed 12
Production 35
Dry 9
Gas 2
Gas production 700,000

KIOWA COUNTY

18-6-16w Foster, Bridwell et al 1..... dry
8-6-16w Finney, Aregood et al 1..... dry
6-5-14w Rushton, Russell & Sloan 1.. dry
15-6-17w Moss, H. M. P. Oil Co. 1.... dry
18-6-16w Fuqua, Alexander et al 1.... 67
Prough, Thos. Medlin et al 1 16
12-6-17w Stone, Lyons & Worley 1.... dry
5-6-16w Fox, Burke et al 1..... dry
8-6-16w Finney, Ford, Foster & Duncan 1 ..... dry
11-6-15w Malernee, Frank Ketch 1.... dry
20-6-16w Kinhead, Alexander et al 1... dry

Wells completed 11
Production 83
Dry 9

LOGAN COUNTY

19-19-4w Rouse "B," Shell Pet. Corp. 2 1050
18-19-4w Weber, Sinclair O. & G. 3...1043
20-19-4w Shaffer, J. E. Crosbie et al 3.2160
30-19-4w Sebranek, Shell Pet. Corp. 4.. 979
McCully, Shell Pet. Corp. 4....6008
17-18-4w Terhune, T. B. Slick 1..... dry
21-18-2w Donahoe, Tibbets & Bond 1.. dry
17-19-4w Freelove, Shell Pet. Corp. 3.. dry
Freelove, Shell Pet. Corp. 2.. 358

Wells completed 9
Production 11,598
Dry 3

MUSKOGEE COUNTY

20-14-20 Holt, L. T. Haney 1..... gas
7-15-15 Friday, Mack Drlg. Co. 1-A.... 200
8-15-15 Barnett, Babcock Bros. 4..... 75
9-15-15 Simmons, C. O. Buckles 1-A .. dry
2-14-18 Crabtree, H. L. Jolly 1..... dry
5-13-16 Flowers, J. R. Graves et al 5.. 30
8-13-16 Jackson, P. O. Miller et al 1.. 35
7-13-18 Dean, E. D. Glasco 1..... dry
31-14-16 Lewis, Lockwood et al 1..... dry
14-14-18 Taylor, W. J. Metzger et al 1. gas
19-13-19 Williams, Smith & Durham 1. gas
Ragan, R. & R. Drlg. Co. 1... 30

Wells completed 12
Production 370
Dry 4
Gas 1
Gas production 6,100,000

OKFUSKEE COUNTY

29-12-10 Hall, Independent O. & G. 2.. dry
33-12-11 McCoy, Josey Oil Co. 19..... 350
11-10-11 Fier, Devonian Oil Co. 5..... 5
16-10-11 Fier, Jarvis & Holm et al 1.. 65
11-10-11 Simmons, W. L. Umbrun 7.... 30
12-10-11 Micco, Atlantic O. P. Co. 1.... 80
15-11-11 Jacobs, Champlin Ref. Co. 1.. 200
29-12-10 Hall, C. L. McMahon et al 2.. 75
33-12-11 McCoy, Josey Oil Co. 12 .... dry
36-11- 9 Unallotted, Burk Greis Oil 2.. gas
15-11-11 W. Washington, Champlin O. & R. Co. 1 100

Wells completed 11
Production 905
Dry 2
Gas 1
Gas production 56,000,000

OKMULGEE COUNTY

9-15-14 Ware, C. Peterson 6..... gas
8-15-12 Doneghy, Frank Murta et al 1 dry
27-12-12 Henry, Dixie Oil Co. 1..... dry
19-15-13 Depriest, Kirkland & Son 1-A. dry
24-15-14 Harrison, Unger Bros. 7..... 6
9-14-14 Stevens, Riney & Williams 4.. gas
15-13-14 Scott, Star Dev. Co. 5..... 10
30-12-13 Henry, W. B. Pine 1..... 20
21-15-14 Osborn, Papoose Oil Co. 20 .. dry
12-15-12 Fisher, Curtis Oil Co. 2 ..... dry
20-15-14 Severs, The Texas Co. 10 25
24-15-14 Harrison, Unger Bros. 8 .... dry
36-14-14 Smith, Taylor & Geiger 12 .... dry
14-14-11 Williams, Sheldon Oil Co. 1 .. dry
30-14-12 Bell, Shaffer O. & R. et al 1. dry
22-13-12 Williams, J. H. Rebold Co. 6 .. 30
1-13-14 Rentie, Alex. Massey 6 ..... dry
7-12-12 Fisher, Tidal Oil Co. 1 ..... dry
9-14-13 Fixico, J. K. Gardner et al 2 .. 20
22-13-14 S. Fox, Aiken Oil et al 4 500

Wells completed 20
Production 611
Dry 11
Gas 2
Gas production 14,000,000

OSAGE COUNTY

1-26- 6 A. D. Morton 1 ..... dry
25-26- 6 White Eagle O. & R. 1 ..... dry
7-24- 8 Galt Brown Oil 2 50
32-23- 9 A. M. Barbour 1 ..... dry
36-22- 8 L. G. Stanley 3 50
23-22-11 Branstetter and Barnsdall Oil 3 dry
15-26- 6 Lewis Prod. Co. et al 1 600
33-26-12 Skelton Moore 6 5
12-23-11 Silurian Oil Co. 5 8
9-21- 9 Clint Moore estate 21 20
A. G. Oliphant 1 ..... dry
16-21- 9 Clint Moore estate 6 ..... dry
Clint Moore estate 7 ..... dry
27-21-11 Oklahoma Natural Gas 1,655.. dry
12-25- 5 Empire O. & R. 2-A ..... dry
26-25- 9 Peters Pet. Co. 8 50
19-24- 8 Atlantic O. P. Co. 1 30
32-21-11 Plains Pet. Co. 1 ..... dry
10-20-11 Devonian Oil Co. 2 15
14-26- 6 Lewis Prod. Co. et al 1 130
Lewis Prod. Co. et al 2 125
30-25- 8 The Texas Co. 1 220
6-23- 9 A. G. Oliphant 1 180
36-22- 8 L. G. Stanley 4 75

Wells completed 24
Production 1558
Dry 10

PONTOTOC COUNTY

19-5-8 Perry, Louisiana O. R. Corp. 12. dry
20-4-4 Smith, Shell Pet. Corp. 1..... dry
19-5-8 Whitney, W. R. Ramsey 3 450
30-5-5 Mole, LaSalle Oil Co. 2 ..... gas
17-5-8 McCall, Homaokla Oil 14 110
McCall, Homaokla Oil 15 60
20-5-8 Shields, E. W. Whitney et al 1 dry

Wells completed 7
Production 620
Dry 3
Gas 1
Gas production 3,000,000

POTTAWATOMIE COUNTY

23-7-4 Cherry, Shaffer O. & R. Co. 4..2117
24-7-4 Wilbarn, Magnolia Pet. Co. 3.... 372
Freid, Westheimer & Daube 5.. 770
25-7-4 Smith, McCulloch Oil Co. 3.... 580
Gesselman, Mid-Kansas O. & G. Co. 4 420
Cherry, The Texas Co. 3.....1430
Cherry, The Texas Co. 4.....4080
Ellison, Prairie O. & G. Co. 4.. 455
26-7-4 Cherry "B," Magnolia Pet. Co. 1 735
Thomas, Pure Oil Co. 2..... 2822
Thomas, Pure Oil Co. 3..... 3730
21-7-5 Weams, I. T. I. O. Co. 2..... 30
Smith, Shell Pet. Corp. 1..... 795
18-8-5 Lindley, Pure Oil Co. 1..... 2563
Lindley, Pure Oil Co. 2..... 2300
Lindley, Pure Oil Co. 3..... 2603
19-8-5 Bellars, Sinclair O. & G. 2..... 2455
23-7-4 Cherry, Shaffer O. & R. 1..... 2305
25-7-4 Smith, McCulloch Oil Co. 4.... 350
Smith, McCulloch Oil Co. 5.... 100
Gilbreath, Sinclair O. & G. 1.... 607
Neeley "B," Sinclair O. & G. 2.. 305
26-7-4 Dodson, Gypsy Oil Co. 3..... 500
Dodson, Pure Oil Co. 1..... 135
14-7-5 Harber, Champlin Ref. Co. 1... dry
18-7-5 Davis, T. B. Slick 1-W..... 5562
20-7-5 T. Pyke "B," Magnolia Pet. 2... 30
C. Youts, Magnolia Pet. 2..... 1180
28-7-5 Youts, Shell Pet. Corp. 1..... 61
30-7-5 Lunay, Mid-Kansas Oil Co. 3... dry
Lunay, Mid-Kansas Oil Co. 4... 345
Zoeller, The Texas Co. 1 ..... dry
32-7-5 Sexton, Twin State Oil Co. ..... dry
18-8-5 Campbell, Prairie O. & G. Co. 3500
8-9-5 Bullock, Empire O. & R. Co. and Amarada Pet. Corp. 1 530
19-8-5 Bellars, Sinclair O. & G. Co. 3 1360
25-7-4 Neeley, Sinclair O. & G. Co. 3 .. 145
26-7-4 Dodson, Gypsy Oil Co. 2..... 292
Dodson, Gypsy Oil Co. 4..... 125
36-7-4 School land, Empire O. & R. 1 660
20-7-5 H. E. Youts, Magnolia Pet. 6.. 1669
M. Guinn, Magnolia Pet. Co. 1 81
30-7-5 Zoeller, The Texas Co. 2..... 127
Stahl, Barnsdall Oil Co. 2..... 160
17-6-5 Lowe, Roxana Pet. et al 1..... dry
11-9-4 Bank, Atlantic O. P. Co. and Phillips Pet. Co. 1 ..... dry
18-8-5 Harding, Independent O. & G. 1 3655
Lindley, Pure Oil Co. 1..... 1200
19-8-5 Hudson, Phillips Pet. Co. 1..... 1072
11-7-4 Clour, Magnolia Pet. Co. 2..... 56
24-7-4 M. Wilbarn, Magnolia Pet. Co. 1 5
Wilbarn, Magnolia Pet. Co. 4 .. 62
8-8-5 Gossland, Amerada Pet. Corp. 1 970
9-8-5 Roberts, McMan Oil and White Eagle O. & R. 1 ..... dry
19-8-5 Ketchum, Darby Pet. Co. 1..... 354
23-7-4 LeClair, Gypsy Oil Co. 4..... 620
24-7-4 Lewis, Blackwell O. & G. 1..... 30
Blandin, Sinclair O. & G. 11.... 40
25-7-4 Cherry, Blackwell O. & G. 1.... 595
Neeley, Sinclair O. & G. 5..... 205
26-7-4 Dodson, Pure Oil Co. 2..... 125
30-7-5 Tolon, Shaffer O. & R. Co. 1...2005

Wells completed 62
Production 55,780
Dry 7

SEMINOLE COUNTY

17- 9-6 Renty, Prairie O. & G. 1..... dry
1- 9-5 Sango, Gypsy Oil Co. 15..... 91
6- 9-6 James, Carter Oil Co. 6..... 1740
30- 9-8 Harris, Harris et al 1..... dry
22- 7-6 Hotulke, Barnsdall Oil Co. 3.... 340
14- 7-6 Gibson, Prairie O. & G. Co. 5.. dry
18- 5-8 Lucy, The Texas Co. 3..... 510
13- 7-6 R. Davis, Independent O. & G. 4 955
22- 7-6 H. Hotulke, The Texas Co. 1.. 558
23- 7-6 Cotcha, Gypsy Oil Co. 7..... 955
24- 7-6 Larney, Carter Oil Co. 4..... 1129
18- 5-8 Reed, Gilcrease Oil Co. 1..... 70
18-10-7 Jones, Shaffer O. & R. et al 1.. dry
1- 9-5 Mayes, Skelly Oil Co. 3-A....2898
6- 9-6 Lottie, Skelly and Atlantic 1..1397
11- 8-5 Coker, Barnsdall Oil Co. 1 1735
13- 8-5 Tiger, T. B. Slick 1..... dry
9- 8-6 Vanbuskirk, Magnolia Pet. 3.... 572
12- 8-6 Rhoades, Magnolia Pet. 7..... dry
26- 8-6 Hoyecha, W. B. Pine 7..... dry
2- 7-6 Wilson, T. B. Slick 1..... dry
13- 7-6 Reed, T. B. Slick 2..... 15
23- 7-6 Cotcha, Pure Oil Co. 10..... 70
23- 5-7 Reed, The Texas Co. 1..... gas
24- 7-6 Johnson, Prod. & Refs. 1..... 580
Moppin, Prod. & Refs. 2..... 1350
6- 9-6 Campbell, T. B. Slick and Skelly Oil 3 385
Campbell, T. B. Slick and Skelly Oil 5 2749
James, T. B. Slick 2..... 589
James, T. B. Slick 3..... 867
Sherry, Skelly Oil Co. and Atlantic O. P. Co. 2-A 457
Shepherd, Skelly Oil Co. 2..... 873
Keenan, Phillips Pet. Co. 1..... dry
10- 8-5 Coker, Gypsy Oil Co. 1..... 900
11- 7-6 Janey, The Texas Co. 6..... 130
13- 7-6 M. Harjo, Carter Oil Co. 4.... 2600
2- 7-7 Harrison, Tidal Oil Co. 1..... dry
7- 9-6 Rentie, McCulloch Oil et al 1.. dry
24- 7-6 Brinson, Pure Oil Co. 2..... 347
18- 5-8 Lucy, The Texas Co. 6..... 660
21-10-7 Davis, Prairie O. & G. 1..... dry

Wells completed 41
Production 25,522
Dry 12
Gas 1
Gas production 28,000,000

STEPHENS COUNTY

28-1s-8w Taliaferro, Harry Hanbury 3.. 90
12-1s-4w Hanson, Magnolia Pet. Co. 2.. 90
Brittain, Wirt Franklin Pet. 6 180
31-1 -8w Malechi, Shaner et al 2..... gas
3-2s-8w Bush, Pace et al 3 140
34-1s-8w Nigh, American P. L. Co. 3.. dry
13-1s-4w Shields, Schermerhorn et al 5 75
1-2s-8w Dare, Kidney et al 1 ..... dry
9-1s-8w Farrout, Saterwood & Hart 2 dry
34-1s-8w Simpson, Roy Carter et al 1.. dry
Simpson, Roy Carter 6..... dry
1-2s-5w Cobb "A," Mudge Oil Co. 8.... 6

Wells completed 12
Production 581
Dry 5
Gas 1
Gas production 1,500,000

WAGONER COUNTY

7-18-15 Heckman, Ellen O. & G. Co. 1 dry
21-18-17 Childers, McCracken et al 6.. gas
22-18-17 Childers, Elk Drlg. Co. 7.... gas
22-18-17 Kidd, Horner et al 1..... gas
24-16-16 Marshall, Peterson & Young 1 dry
8-15-16 Howard, H. W. Kiskadon 2.. dry
13-16-17 Barnes, Chicago Drlg. Synd. 1 dry
10-18-15 Sier, C. A. Devazzard et al 1. dry
29-18-17 Childers, Elk Drlg. Co. 3..... gas

Wells completed 9
Dry 5
Gas 4
Gas production 11,450,000

MISCELLANEOUS COUNTIES

Caddo County—
5- 5- 9w Moss, Magnolia Pet. Co. 3.. 6
15-12-11w Shanklin, Abernathy & Ashton 1 ..... dry
Garvin County—
31-1-3w Tussy, Magnolia Pet. Co. 2.... dry
18-1-3w Derdeyn, Magnolia Pet. Co. 1. dry
Comanche County—
33-1-9w Simpson, Pelwin Oil Co. 1.... dry
Oklahoma County—
24-11-3w Park, I. T. I. O. Co. 1.....6564
Lincoln County—
10-12-6 Jennings, Kingwood Oil 1..... dry
35-17-6 Fairs, T. P. C. & O. Co. 1..... dry
Pittsburg County—
10-7-18 Dougherty, Quinton Spelter Co. 1 ..... gas
7-6-14 Reed, B. C. Aylor 1 ..... dry
Payne County—
7-18-4 Ramsey, Pure Oil Co. 3..... 480
8-18-4 Weir, Pure Oil Co. 1-A..... 718
13-19-5 Haymond, Penn O. & G. Co. 1. dry
20-19-6 Green, Magnolia Pet. Co. 3.... dry
8-18-4 Axtell, Pure Oil Co. 3..... 115
Hughes County—
5-7-8 Frederick, Amerada Pet. Corp. 1. dry
Grant County—
27-27-3w Lane, Argo Oil Co. 1-A ..... dry
Cotton County—
6-2s-10w Record, Jenkins et al 2..... dry
2-2s-10w Chambers, Shasta Oil Co. 2 21
35-1s-10w Chambers, Razor & Atkins 1 dry
2-2s-10w Chambers, Shasta Oil Co. 3.. 37
Noble County—
20-21-1w Irwin, Wirt Franklin Oil 1.. dry
Marshall County—
24-5s-5 Null, Ward Merrick 1..... dry
Pawnee County—
10-22-3 Tucker, Empire O. & R. Co. 1 dry
13-20-9 Kender, Kennedy & Horner 2 dry
Jackson County—
33-1s-20w Mock, Stanley McGregor 1 dry
LeFlore County—
17-6-21 Cutler, LeFlore County G. & E. Co. 1 ..... dry
Tulsa County—
35-19-13 Wray, Munn Bros. 2 ..... dry
Beckham County—
21-9-25w Davis, Magnolia Pet. Co. 2... gas

Latimer County—
17-6-21 Cutler, LeFlore G. & E. Co. 1 .. dry

Wells completed 30
Production 7941
Dry 21
Gas 2
Gas production 72,000,000

EAST CENTRAL TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Anderson	5	0	5	0	2	4	6
Cherokee	2	0	2	0	1	0	1
Falls	0	0	0	0	0	2	2
Freestone	1	0	0	0	0	1	1
Limestone	1	0	1	0	0	1	1
Henderson	0	0	0	0	0	1	1
Leon	0	0	0	0	0	2	2
Milam	0	0	0	0	0	1	1
Navarro	0	0	0	0	1	1	2
Smith	1	0	1	0	0	0	0
Van Zandt	0	0	0	0	1	1	2
Total Jan.	10	0	10	0	5	14	19
Total Dec.	9	3,342	6	0	1	17	18
Difference	1	3,342	4	0	4	3	1

WELLS COMPLETED
ANDERSON COUNTY
Boggy Creek—Callier, Humble Oil & Refining Co. 1 ..... abd
Boggy Creek—Colman, Humble Oil & Refining Co. 1 ..... abd
Boggy Creek—Holloway, Humble Oil & Refining Co. 2 ..... abd
Boggy Creek—Todd, Humble Oil & Refining Co. 1 ..... abd
Bethel—Bruce, Pure Oil Co. 2 ..... abd

Wells completed 5
Production 0
Abandoned 5

CHEROKEE COUNTY
Boggy Creek—Weinberg, Humble Oil & Refining Co. 4 ..... abd
Kennedy, Woodley & Nichols 1 ..... abd
FREESTONE COUNTY
Sessions, Hoosier et al 1 ..... abd
LIMESTONE COUNTY
Stroud, Hicks & Deering 1 ..... abd

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	13	1,900	3	0
Cowley	5	0	2	3
Elk	7	257	2	0
Greenwood	14	665	6	1
Miscellaneous	11	155	6	3
Total January	50	2,977	19	7
Total December	46	3,125	22	4
Difference	4	148	3	3

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Butler	10	21	31
Cowley	6	37	43
Elk	2	23	25
Ellis	2	15	17
Greenwood	3	25	28
McPherson	1	13	14
Marion	1	11	12
Russell	1	10	11
Sedgwick	22	29	51
Sumner	4	17	21
Woodson	1	10	11
Miscellaneous	10	73	83
Total January	63	284	347
Total December	74	245	319
Difference	11	39	28

WELLS COMPLETED
BUTLER COUNTY
7-25-5 Winds, Western Exp. Co. and Larobb Oil 1 ..... dry
10-26-4 Orban, Wichita Pet. Co. 2-A 50
27-27-5 Hutchinson, Empire O. & R. Co. 4-B 100
R. Sherrock, Empire O. & R. Co. 4 60
R. Sherrock, Empire O. & R. Co. 5 300
10-27-6 Marshall, Rosenthal et al 3 200
4-27-6 Schaffer, Rosenthal et al 13 150
26-26-6 Bolin, Amerada Pet. Corp. 1 .. dry
22-24-4 Randall, Swartz et al 1 ..... dry
22-27-5 Willitz, Empire O. & R. Co. 6.. 250
27-27-5 Willitz, Empire O. & R. Co. 7.. 200
Hutchinson, Empire O. & R. Co. 5-B 350
6-27-6 Sluss, Garden et al 3-B 240

Wells completed 13
Production 1900
Dry 3
COWLEY COUNTY
12-32-6 Kinninmath, Trees Oil Co. 1 .. gas
13-34-6 Melick, Kentucky N. & O. Co. 1 dry
30-31-6 Conrod, Lewis Prod. Co. 1 .... dry
18-33-7 Fulls, Kentucky N. & O. Co. 1.. gas
13-34-6 Melick, Kentucky N. & O. Co. 2 gas

Wells completed 5
Dry 2
Gas 3
Gas production 8,000,000
ELK COUNTY
30-30-11 Colyer, Griffin & Bell 5 32
5-31-10 Walker, Wilson, Jones et al 2 30
10-31-10 Townsite, Litteral et al 1 .... dry
18-31-10 McSpadden, Peters Pet. Co. 1.. dry
10-31-10 Townsite, Sharkey & Ames 1 .. 20
9-31-10 Eyman, National Union Oil Co. 8 100
10-31-10 Sonner Gas Co. 1 75

Wells completed 7
Production 257
Dry 2
GREENWOOD COUNTY
29-22-13 Luthi, Simmons & Rhodes 2 .. 75
24-24- 9 Peterson, C. B. Christy 1 ..... dry
11-22-10 Green, Phillips Pet. Co. 3 200
21-33-11 Edwards, Empire O. & R. Co. 1 dry
Edwards, Empire O. & R. Co. 10 50
Edwards, The Texas Company 1-C 100
25-23-11 Hillman, Empire O. & R. Co. 1 dry
5-26-10 Moore, C. Kayser 1 ..... dry
7-27-11 Grundy, Mohawk Oil Co. 4 100
6-24-12 Smith, The Prairie O. & G. Co. et al 1 ..... dry
25-22-12 Schwab, Empire O. & R. Co. 15-A 15
29-22-13 Luthi, Amerada Pet. Corp. 5 .. 125
21-23-11 Rice, York State Oil Co. 1 ... dry
5-24-13 Shore, Sheedy et al 1 ..... gas

Wells completed 14
Production 665
Dry 6
Gas 1
Gas production 1,000,000
RUSSELL COUNTY
5-14-15w Dortland, Midwest Exp. Co. 16 80
SUMNER COUNTY
8-34-2 Wartick, Helmerick & Payne 1 dry
ELLIS COUNTY
36-12-16w Austin, Midwest Exp. Co. 1.. 75
McPHERSON COUNTY
31-18-2w Larson, White Eagle O. & R. Co. 1 ..... dry
COFFEY COUNTY
11-22-15 Douglas, Clark Braden et al 1 dry
1-23-14 Wiler, Union Gas Co. 1 ..... gas
Wiler, Union Gas Co. 2 ..... gas
MARION COUNTY
26-22-5 Jensen, Empire O. & R. Co. 1.. dry
11-20-3 Burket, Empire O. & R. Co. 1.. dry
MORRIS COUNTY
15-16-7 Pape, General Utilities Co. 1 .. gas
WOODSON COUNTY
24-25-13 Eades, Fields & Cross 2 ..... dry

Wells completed 11
Production 155
Dry 6
Gas 3
Gas production 5,500,000

WEST TEXAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Borden	1	.....	1	0
Concho	1	.....	1	0
Crane	3	422	0	0
Crockett	1	.....	1	0
Fisher	1	208	0	0
Glasscock	2	25	1	0
Howard	19	17,963	2	0
Jones	15	3,569	2	0
Mitchell	1	.....	1	0
Pecos	10	8,777	2	0
Irion	1	.....	1	0
Reagan	6	3,102	0	0
Sutton	1	.....	1	0
Stonewall	1	.....	1	0
Scurry	1	.....	1	0
Tom Green	1	.....	1	0
Taylor	2	.....	2	0
Upton	1	150	0	0
Ward	1	125	0	0
Winkler	43	280,724	1	0
Total Jan.	112	315,065	19	0
Total Dec.	85	324,727	25	0
Difference	27	9,662	6	0

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	S.D.	Ttl.
Crane	0	4	0	4
Crockett	0	0	7	7
Fisher	3	3	3	9
Glasscock	3	6	1	10
Howard	15	48	5	68
Jones	9	17	5	31
Mitchell	2	3	0	5
Pecos	12	18	10	40
Reagan	3	5	1	9
Runnels	0	3	6	9
Upton	0	3	0	3
Ward	1	3	2	6
Winkler	17	59	14	90
Misc. Counties	10	35	42	87
Total Jan.	75	207	96	378
Total Dec.	60	258	92	410
Difference	15	51	4	32

WELLS COMPLETED
BORDEN COUNTY
J. J. Koonsman, E. L. Doheny, Jr., 1 .. dry
CONCHO COUNTY
Bryson, Sartin Oil Co. 1 ..... dry
CRANE COUNTY
W. N. Waddell, Gulf Production Co. 5.. 17
J. T. McElroy, Gulf Production Co. 57.. 185
University-D, Tidal Oil Co. 1 220

Completions 3
Production 422
CROCKETT COUNTY
J. H. Tippett, Zoch et al 1 ..... dry
FISHER COUNTY
J. L. Sharp, Cranfill & Reynolds 1 208
GLASSCOCK COUNTY
H. R. Clay, Gulf Prod. Co. 3 25
Dora Roberts, Magnolia Pet. Co. 15 ... dry

Completions 2
Production 25
Dry holes 1
HOWARD COUNTY
Dora Roberts, Bristow & Merrick 2.... 840
Dora Roberts-B, Moody Oil Corp. 9 ...2832
H. R. Clay, Green Oil & Ref. Co. 4..... 125
Otis Chalk, Pure Oil Co. 7 175
W. R. Settles, Sun Oil Co. 4 720
H. R. Clay, Gulf Prod. Co. 4 147
W. R. Settles-B, American Maracaibo Co. 1 540
Dora Roberts-B, Moody Oil Corp. 10....1824
W. R. Settles-A, Group No. 1 Oil Corp. & Marland Prod. Co. 6 490
W. R. Settles, Louisiana Oil Ref. Corp. 2 903
Mable Quinn, Texon Oil & Land Co. 1.. dry
Dora Roberts, Amerada Pet. Corp. 4 ...1800
Dora Roberts-B, Moody Corp. 8 2840
Dora Roberts-E, Moody Corp. 3 ..... dry
H. R. Clay, Green Oil & Ref. Co. 3 160
H. R. Clay, Green Oil & Ref. Co. 5 85
W. R. Settles, Group No. 1 Oil Corp. & Marland Prod. Co. 4 1442
Dora Roberts, Magnolia Pet. Co. 12 ... 400
Dora Roberts, Schermerhorn Oil Co. 4..2640

Completions 19
Production 17,963
Dry holes 2
JONES COUNTY
C. A. Bickley, Cranfill & Reynolds & Dilworth 1 75
J. H. Grayson, Roeser & Pendleton & Landreth Prod. Corp. 3 80
Hudspeth, Atkinson & Sandefer 1 50
J. H. Grayson, Robert Oil Corp. 6 50
J. H. Grayson, Robert Oil Corp. 7 820
C. A. Bickley, Snowden & McSweeney 4 870
L. Carter, The Texas Co. 3 50
Thomas, Clark & Atlantic et al 1 ..... dry
C. A. Bickley, Cosden-Herbert et al 5.. 520
Mason, Marland Prod. Co. 5 422
Mason, Marland Prod. Co. 6 256
Mason, Phillips Pet. Co. 5 316
L. Carter, The Texas Co. 3 50
L. Carter, The Texas Co. 4 10
Parr, Woods & Williams 1 ..... dry

Completions 15
Production 3569
Dry holes 2
MITCHELL COUNTY
C. Weichsel, Hucony Gas Co. 1 ..... dry
PECOS COUNTY
M. A. Smith-D, Shell Pet. Corp. 3 72
M. A. Smith-E, Shell Pet. Corp. 1 37
E. W. Bennett, McCarty Oil Co. 1 ..... dry
I. G. Yates-G, Mid-Kansas Oil & Gas Co. 2 1140
M. A. Smith-C, McMan Oil & Gas Co. 2 593
M. A. Smith-C, McMan Oil & Gas Co. 3 215
M. A. Smith-C, McMan Oil & Gas Co. 4.1440
M. A. Smith, Mid-Kansas Oil & Gas Co. 4 5040
I. G. Yates, Yates Ranch Development Co. 1 ..... dry
Mrs. M. A. Smith, Red Bank Oil Co. 5.. 240

Completions 10
Production 8777
Dry holes 2
IRION COUNTY
J. D. Sugg, Signal Oil Co. 1 ..... dry
REAGAN COUNTY
University, Big Lake Oil Co. 152 305
University, Big Lake Oil Co. 154 667
University, Big Lake Oil Co. 155 175
University, Big Lake Oil Co. 156 175
University, Big Lake Oil Co. 157 330
University, Group 1, Texon Oil & Land Co. 1-B 1450

Completions 6
Production 3102
SUTTON COUNTY
Cawthorn, Phillips Pet. Co. 1 ..... dry
STONEWALL COUNTY
Rayner, Sun Oil Co. 1 ..... dry
SCURRY COUNTY
Wm. Millmer, Landreth Prod. Corp. 1.. dry
TOM GREEN COUNTY
Adams, Tulsa Oil Co. 1 ..... dry
TAYLOR COUNTY
Payne, Hurley Oil Co. 1 ..... dry
Parramore, Mid-Kansas Oil & Gas Co. 1 dry
Completions 2
Dry holes 2
UPTON COUNTY
J. F. Lane-A, T. P. Coal & Oil Co. 12... 150
WARD COUNTY
S. F. Hayzlett, Shipley et al 1 125
WINKLER COUNTY
Grisham-Hunter-G, Atlantic O. P. 7... 4,440
T. G. Hendricks, Tract-B, Gulf Prod. Co. 20 21,168
Lum Daugherty, Atlantic O. P. et al 2 900
Grisham-Hunter-C, Pure Oil Co. 12...30,000
Grisham-Hunter-C, Pure Oil Co. 13...13,950
Ida Hendricks, T-88-J, So. Cr. O. P. Co. 3-A 217
Ida Hendricks, T-88-J, So. Cr. O. P. 5. 147
Ida Hendricks, T-88-L, So. Cr. O. P. 2. 3,600
Ida Hendricks, T-264, So. Cr. O. P. 1-A 10
T. G. Hendricks, T-88-M, So. Cr. O. P. 9 3,600
T. G. Hendricks, T-88-M, So. Cr. O. P. 27 1,750
E. W. Cowden, Gulf Prod. Co. 1 20,368
Ida Hendricks, Gulf Prod. Co. 1 425
T. G. Hendricks, Tract-C, Gulf Prod. 31 185
Ida Hendricks, Anderson et al 1 ..... dry
E. G. Hutchings, T. B. Cranfill et al 1 100
Grisham-Hunter-A, Republic Prod. 5.. 8,000
Grisham-Hunter-A, Republic Prod. 6..32,200
Grisham-Hunter-B, Republic Prod. 4.. 1,000
E. W. Cowden-A, Shell Pet. Corp. and The Texas Co. 5 1,708
E. W. Cowden-A, Shell Pet. Corp. and The Texas Co. 6 5,028
Grisham-Hunter, T-68-3-B, So. Cr. O. P. Co. 1 100
Grisham-Hunter, T-89-C, So. Cr. O. P. Co. 1 450
T. G. Hendricks, T-67-2-D, So. Cr. O. P. Co. 4 35
T. G. Hendricks, T-88-M, So. Cr. O. P. 25 1,800
T. G. Hendricks, T-88-M, So. Cr. O. P. 28 6,360
T. G. Hendricks, T-88-M, So. Cr. O. P. 29 25,500
T. G. Hendricks, T-88-M, So. Cr. O. P. 30 4,320
T. G. Hendricks, T-88-Q, So. Cr. O. P. 1 912
Grisham-Hunter-E, Atlantic O. P. 6....22,000
Grisham-Hunter, Culberson Bros. 1.... 125
Grisham-Hunter-A, Republic Prod. 4... 880
Ida Hendricks, T-88-I, So. Cr. O. P. 7. 364
Ida Hendricks, T-88-W, So. Cr. O. P. .1,358
T. G. Hendricks, Tr.-A, Gulf Prod. 25..20,440
E. W. Cowden, Amerada Pet. Corp. 2. 9,996
T. G. Hendricks-B, Humble O. & R. 4. 20
T. G. Hendricks-C, lease 2, Humble O. & R. Co. 2 10,560
E. W. Cowden, Prairie Oil & Gas 4.....21,312
Lum Daugherty, Shell Pet. Corp. et al 1 2,088
T. G. Hendricks-B Shell Pet. Corp. and The Texas Co. 6 455
T. G. Hendricks, T-88-S, So. Cr. O. P. Co. 1 2,139
Tobe Morton, Wentz Oil Corp. 1 714

Completions 43
Production 280,724
Dry holes ..... * 1

SOUTHWEST TEXAS FIELDS

Summary of Field Operations

	Comp	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Mirando	37	4,023	9	6	17	31	48
Joe Bruner	47	11,957	7	1	12	40	52
Luling Field	2	30	0	0	0	2	2
Agua Dulce Field	1	0	0	1	2	2	4
Refugio Field	7	300	1	4	4	12	16
Yoast Field	6	2,532	1	0	0	7	7
Miscellaneous	23	0	21	1	14	79	93
Ttl. Jan.	123	18,842	39	13	49	173	222
Ttl. Dec.	88	7,856	47	15	34	184	218
Difference	35	10,986	8	2	15	11	4

Initial gas production for district, 479,000,000 feet.

SOUTHWEST TEXAS
WELLS COMPLETED
SIMMS FIELD—DUVAL
Simms Oil Co. 3 ..... gas
DRISCOLL FIELD
Robert Driscoll 13 ..... gas
SCHOOLFIELD—O'BYRNE
Onyx Oil Co. 2 75
Onyx Oil Co. 3 150
The Texas Company 2 100
Magnolia Petroleum B-3 25
S. & O. Oil Co. 1 25
Sun Oil Co. 2 100
RANDADO FIELD—JIM HOGG
Randado Oil 27 100
Randado Oil 28 0
T. J. Conway 1 ..... abd
ALWORTH FIELD
Alworth-Stevens-Hild 15M 25
Brooklyn Oil 1 ..... abd
COLE FIELD—WEBB
O. W. Killam 3 (1) ..... gas
ALBERCAS FIELD
O. W. Killam 31 25
O. W. Killam 32 ..... abd
Rycade Oil Corp. 7 600
Rycade Oil Corp. 6 900
Rycade Oil Corp. 9 350
Sun Oil Co. A-9 300
Sun Oil Co. A-11 250
Sun Oil Co. A-10 200
Sun Oil Co. A-13 250
MAGNOLIA—COLE FIELD
Cole Petroleum Co. 66 150
Houston Gulf Gas 1 ..... gas
WILDCATS
J. G. Mackay 1 ..... abd
The Texas Company 1 ..... abd
G. C. Salley 1 ..... abd
JENNING FIELD—ZAPATA
O. W. Killam 8 100
O. W. Killam 9 50
O. W. Killam 10 50
O. W. Killam 11 50
South Texas Prod. 2 ..... gas
Charles L. McCaslin ..... abd
ANDREWS FIELD
Cosner-Dannelley 1 ..... gas
MIRANDO VALLEY
O. W. Killam 1 ..... abd
R. V. Hill 4 ..... abd

Wells completed 22
Oil wells completed 22
Gas wells completed 4
Dry and abandoned 4
Oil production initial 4025
Gas production initial 175,000,000
YOAST FIELD—BASTROP
Amerada Petroleum 1 ..... abd
Cranfill & Reynolds 3 2500
Cranfill & Reynolds 4 200
Cranfill & Reynolds 5 600
Atlantic Producing 1 200
The Texas Company 1 100

Wells completed 6
Dry and abandoned 1
Oil wells completed 5
Oil production initial 2532
JOE BRUNER (SALT FLATS) FIELD—CALDWELL
Pat Armstrong 1 ..... abd
J. S. Abercombie Oil 2 50
J. S. Abercombie Oil 3 100
Abercombia Oil Co. 4 900
Abercombia Oil Co. 5 150
Cranfill & Reynolds 3 500
Cranfill & Reynolds 4 ..... abd
Golden West Oil 1 ..... gas
Golden West Oil 1 200
Golden West Oil 5 ..... abd
Gulf Production Co. 1 250
Gulf Production Co. 2 500
Gulf Production Co. 1 300
Gulf Production Co. 2 500
Gulf Production Co. 3 900
Gulf Production Co. 4 1000
Gulf Production Co. 5 700
Gulf Production Co. 1 400
Gulf Production Co. 2 600
Gulf Production Co. 3 300
Gulf Production Co. 4 300
Gulf Production Co. 5 200
Gulf Production Co. 6 50
Humble Oil & Ref. Co. 1 100
Humble Oil & Refining Co. 2 150
Humble Oil & Refining Co. 2 150
Humble Oil & Refining Co. 1 100
Humble Oil & Refining Co. 1 50
Humble Oil & Refining Co. 1 100
Humble Oil & Refining Co. 2 100
Jake Jarmon 1 ..... abd
Linderman-Atlantic A-1 200
Lutex Oil, Inc., 1 ..... abd
Lutex Oil, Inc., 3 100
Sun Oil Co. 3 150
Shell Petroleum 1 ..... abd
Shell Petroleum 1 ..... abd
Shell Petroleum 1 100
Shell Petroleum 1 400
Shell Petroleum 2 100
Shell Petroleum 1 574
Shell Petroleum 4 1000
Shell Petroleum 5 1200
The Texas Company 1 65
Turman & Brown 1 50
M. K. Towns 2 50
M. K. Towns 3 50

Wells completed 67
Dry and abandoned 7
Gas wells completed 28
Oil wells completed 31
Oil production initial 11,957
Gas production initial 3,000,000
LULING FIELD
Magnolia Petroleum A-5 25
Magnolia Petroleum B-2 5

Wells completed 2
Oil wells completed 2
Oil production 30
AGUA DULCE FIELD—NUECES
Houston Oil Co. 1 ..... gas
REFUGIO FIELD
Benedum & Trees 3 ..... oil
Houston Oil Co. 4 200
Houston Gulf Gas 2 ..... gas
Houston Gulf Gas 3 ..... gas
William F. Morgan 2 ..... abd
Mission Drlg. Co. 2 ..... gas
Saxet Gas Co. 5 ..... gas

Wells completed 7
Dry and abandoned 1
Oil wells completed 4
Gas wells completed 200
Oil production approximate 200
Gas production initial 200,000,000
MISCELLANEOUS
BEXAR COUNTY
Crouch et al 1 ..... abd
Gas Ridge Dev. Kennon 10 ..... abd loc
George F. Hinton ..... abd
Dingman Oil, Feldman 1 ..... abd
CALDWELL COUNTY
Pat Armstrong, Heidenheimer 1 ..... abd
Neumann & McInture, Patton 1 ..... abd
Gulf Production, Reed 1 ..... abd
M. S. Holladay, Bouldin 1 ..... abd

Russell-Hill, Hill 1 ..... abd
Roxana Petroleum, Wilma 1 ..... abd loc

EDWARDS COUNTY

Gall Oil Co., Jergin 1 ..... abd

GOLIAD COUNTY

McCarson, Broyles 1 ..... abd
J. S. Alexander, Campbell 1 ..... abd

GUADALUPE COUNTY

Wolf Creek Oil, Hocke 1 ..... abd loc
Magnolia Petroleum Adams ..... abd

MAVERICK COUNTY

Ryeade Oil Corp., Chittim 2 ..... abd

MEDINA COUNTY

Webster, Odom 1 ..... abd
Ferguson et al, Odom 2 ..... abd

NUECES COUNTY

R. & G. Corp., Allen 1 ..... abd
Alexander & Smith, Bowers ..... abd

SAN PATRICIO COUNTY

Saxet Gas Co., White Point ..... gas

VICTORIA COUNTY

Humble Oil & Ref., Roos 1 ..... abd
Houston Oil Co., McFaddin 2 ..... abd

Wells completed	23
Dry and abandoned	21
Gas wells completed	2
Gas production initial	51,000,000

NORTH CENTRAL TEXAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Archer	29	346	18	0
Brown	37	412	19	1
Callahan	29	173	19	0
Clay	1	0	1	0
Coleman	21	442	13	1
Comanche	3	85	0	0
Cooke	7	261	1	0
Eastland	8	28	6	1
Erath	1	0	0	1
Foard	1	0	1	0
Grayson	1	0	0	1
Haskell	2	65	1	0
Montague	4	71	1	0
McCulloch	1	0	1	0
Jack	4	485	2	0
Palo Pinto	3	50	1	1
Throckmorton	1	0	1	0
Shackelford	24	3,675	7	0
Stephens	8	2	4	3
Wichita	36	4,180	8	0
Wilbarger	37	4,121	10	0
Young	28	393	17	0
Total Jan.	286	14,739	131	9
Total Dec.	322	14,642	145	13
Difference	36	147	14	4

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	S.D.	Ttl.
Archer	3	22	8	39
Brown	3	22	29	54
Callahan	4	3	6	13
Coleman	14	25	10	49
Cooke	7	7	8	22
Clay	0	0	7	7
Eastland	4	22	10	36
Erath	2	9	2	13
Haskell	2	2	5	7
Jack	9	6	6	21
Montague	4	1	5	10
Palo Pinto	2	6	5	13
Shackelford	3	12	0	15
Stephens	2	16	1	19
Throckmorton	1	1	1	2
Wichita	20	38	4	62
Wilbarger	10	61	13	84
Young	7	21	8	36
Misc. counties	4	7	8	19
Total Jan.	104	281	136	521
Total Dec.	97	279	141	517
Difference	7	2	5	4

WELLS COMPLETED
ARCHER COUNTY

L. F. Wilson-L, Gulf Production Co. 1 .. dry
W. O. Hayter-A, Gulf Production Co. 8 .. dry
G. N. Gant, C. E. Litchfield et al 1 ... dry
D. D. Lyles, Jim Turner et al 3 120
S. E. Oldham, Continental Oil Co. and Republic Prod. Co. 6 11
E. Alexander et al, F. C. Grebin et al 1 28
J. T. Richardson, Madden & Hunt 13... 25
R. E. Hill, The Texas Company 23 19
Perry Browning, Perry Browning 1 ... dry
Parrish-A, Reno Oil Co. 6 ..... dry
Plowman et al-B, O. R. Ridgeway 2.. dry
Cernosek, American Ref. Co. Properties & Corlett & White 5 23
L. L. Hudson, Humble Oil & Refining Co. 1 17
G. Williams, J. B. Peacock 2 40
G. Williams, Perkins & Cullum 1 11
E. Alexander et al, Gulf Prod. Co. 1 .. 45
J. H. Turbeville, C. E. Beavers 1 ..... dry
W. H. Taylor, J. H. Howell et al 1 ..... dry
T. B. Wilson, F. P. Rose et al 1 ..... dry
P. P. Langford et al-A, W. C. Young et al 1 ..... dry
H. E. Porter, L. T. Burns 1 ..... dry
A. M. Hennig, F. C. Grebin 1 ..... dry
C. Wagner estate, Tidal Oil Co. 1 ..... dry
Parrish, F. Payne et al 7 12
W. L. Andrews, H. Donohoo et al 3 .... dry
G. Symank, C. W. Gilliland et al 2 ..... dry
Wolf, L. C. Hammond & Continental Oil Co. 1 ..... dry
W. L. Andrews, L. V. Hull et al 2 ..... dry
G. Williams, Perkins & Cullum 2 ..... dry

Completions	29
Production	346
Dry holes	18

BROWN COUNTY

Guthrie, Amerada Petroleum Corp. 2 .. dry
Caldwell, Caldwell 3 3
Hayes, Gore & Brown 2 5
Hill, Green 2 10
Stanley, Harry Gutzman 8 12
Collier, Lloyd Oil Co. 13 10
Collier, Lloyd Oil Co. 14 ..... dry
Davis, McClung 1 ..... dry
Pugh, Riordan et al 1 ..... dry
Gaines, Acrey Brothers 1 ..... dry
Weedon, Clark-Buffalo Oil Co. 1 ..... dry
R. Hickman, Humble Oil & Refining Co. 27 14
Guthrie, Amerada Petroleum Corp. 1 .. dry
W. E. Mauldin, Amerada & Roesser & Pendleton 1 ..... dry
Hodnett-A, Humble Oil & Refining Co. 17 4
Marr, Mitcham et al 1 10
Armstrong, Young Brothers, Alexander & Woodley Petroleum Co. 7 85
Butler, Young Brothers, Alexander & Woodley Petroleum Co. 3 25
Merritt, Betts et al 1 ..... dry
Shields, Bruce 4 5
Mayes, Paramount Oil Royalties 1 10
Mayes, Gore & Brown 1 ..... gas
Wheeler, Anderson et al 1 ..... dry
Tungate, Atlantic Oil Prod. Co. & Barnes 1 ..... dry
DeBusk, Barnsdall Oil Corp. 1 ..... dry
R. Hickman, Young Brothers, Alexander & Woodley Petroleum Co. 17 60
R. Hickman, Young Brothers, Alexander & Woodley Petroleum Co. 19 75
Cabler, Malcolm 1 ..... dry
Nash, Olvey & Robbins 1-A ..... dry
R. Hickman, Humble Oil & Refining Co. 28 24
Bull, Midsun Oil Corp. & Brennan 1 .... dry
Rosser, Milham Corp. 7 ..... dry
DeBusk, Phillips Petroleum Co. 1 ..... dry
Henson, Ramsey 5 ..... dry
Tate, Stone, Gilbert et al 1 ..... dry
R. Hickman, Ven-Mex Petroleum Co. 22 .. 35
R. Hickman, Young Brothers, Alexander & Woodley Pet. Co. 18 25

Completions	37
Production	412
Gas production	250,000
Dry holes	19

CALLAHAN COUNTY

P. G. Hatchett, The Texas Company 16 dry
P. G. Hatchett, Reiter-Foster Oil Corp. 17 40
P. G. Hatchett, Reiter-Foster Oil Corp. 16 ..... dry
P. G. Hatchett, Moutray Oil Co. 9 19
P. G. Hatchett, Moutray Oil Co. 8 15
P. G. Hatchett, Moutray Oil Co. 7 10
Griggs, Mach 1 ..... dry
Head Brothers-B, Humble Oil & Refining Co. 2 ..... dry
Hughes, Gibson & Johnson 1 ..... dry
Williams, Section 24, Dickey Oil Co. 1.. dry
Sealy, Empire Gas & Fuel Co. 1 ..... dry
Klutts, Gras Roots Oil Co. 6 20
Sawyer, Prairie Oil & Gas Co. 2 5
McLendon, True & Dees 1 ..... dry
Cavanaugh, Beddingfield & Welch Brothers 5 ..... dry
T. Windham, Branch Brothers 1 ..... dry
Jones, EWMO Oil Co. 1 ..... dry
D. B. Cowling, Head & Hoffman 1 .... dry
P. G. Hatchett, Reiter-Foster Oil Corp. 7 ..... dry
P. G. Hatchett, Reiter-Foster Oil Corp. 15 ..... dry
P. G. Hatchett, The Texas Company 13 20
P. G. Hatchett, The Texas Company 14 18
P. G. Hatchett, The Texas Company 16 dry
Hickman, Holmes et al 3 6
Hickman-A, Holmes et al 1 ..... dry
P. G. Hatchett, Moutray Oil Co. 10 20
Smith, Stratton 1 ..... dry
Hatchett, The Texas Company 17 ..... dry
Maltby, Webb 1 ..... dry

Completions	29
Production	175
Dry holes	19

CLAY COUNTY

Fee, American Refining Prop. 1 ..... dry

COLEMAN COUNTY

Manning, Lyles et al 1 ..... dry
Morris, States Oil Corp. 2 ..... gas
Hinds, Continental, Atlantic et al 2.. dry
Overall, Continental Oil Co. et al 10 .. 33
Rice, Dunnigan & McCrady 4 ..... dry
Overall, Foster 1 ..... dry
Standbridge, McClung & Hickey 1 .... dry
Chandler, Toombs & Eppler 1 ..... dry
Alexander, Anzac Oil Co. et al 1 120
Gray, Head 1 ..... dry
Gill, Midwest Exploration Co. 2 ..... dry
T. M. Hays, The Texas Company 4 45
Thate, Jamison & Pollard 1 ..... dry
Kingsberry, B. Carter 1 ..... dry
M. T. Overall, Continental Oil Co. & Atlantic Oil Co. et al 3 100
M. T. Overall, Independent Oil & Gas Co. 4 50
Robertson, Samuels et al 1 20
Polk Brothers, Wilson et al 1 ..... dry
Terry, Roth & Faurot 2 ..... dry
Anson, American-Maracaibo Co. 1 ..... dry
Jennings-A, Cunningham et al 13 74

Completions	21
Production	442
Gas production	5,000,000
Dry holes	13

COMANCHE COUNTY

Perry, Davis et al 1 25
McKeehan, Fain 2 25
Gardenshire, Mon-Tex Oil Corp. 1 35

Completions	3
Production	85

COOKE COUNTY

R. J. Timmis-A, Kewanee Oil & Gas Co. 4 156
A. J. Dennis, Thornton-Taubert Oil Co. 1 16
R. B. Poteet, Humble Oil & Refining Co. 1 12
A. J. Dennis, Thornton-Taubert Oil Co. 1 16
J. C. Embry, Pure Oil Co. 3 43
R. A. Ware, Staniforth & Skelly Oil Co. 1 ..... dry
A. J. Dennis, Thornton-Taubert Oil Co. 2 18

Completions	7
Production	261
Dry holes	1

EASTLAND COUNTY

Horn, Davis et al 1 ..... dry
Parker, Goodwin et al 2 28
McHenson, Gordon et al 1 ..... dry
Hartwick, Hamon, Jr., 1 ..... dry
T. L. Scott, Parsons et al 4 ..... gas
L. F. Parsons, Schimmel Production Co. 1 ..... dry
U. Casey-B, Mook-Texas Oil Co. 5 ..... dry
Fee land, T. P. Coal & Oil Co. 4 ..... dry

Completions	8
Production	28
Gas production	4,250,000
Dry holes	6

ERATH COUNTY

Smith, Snebold & White 1 ..... gas

FOARD COUNTY

J. F. Mathews, Fain-McGaha Oil Corp. et al 3 ..... dry

GRAYSON COUNTY

G. W. Wall, Simpson-Fell Oil Co. 3 .... gas

HASKELL COUNTY

Thompkins, Martin & Stewart 1 ..... dry
Reynolds Cattle Co., Superior Oil Corp. 2 65

Completions	2
Production	65
Dry holes	1

MONTAGUE COUNTY

S. M. Salmon-A, Bridwell Oil Co. 8 .. dry
W. W. Jones-A, Continental Oil Co. 5. 14
L. Keck-A, Pure Oil Co. 11 16
Maddox-D, Pure Oil Co. 6 41

Completions	4
Production	71
Dry holes	1

MCCULLOCH COUNTY

West, McLean & Jamison 3 ..... dry

JACK COUNTY

N. F. Rudolph, L. M. Lindenfeller 1 ... dry
O. Loving, Bryson Oil & Gas Co. 1 231
M. Bryson, Prairie Oil & Gas Co. 1 ... 254
Johnson, Fletcher Royalty & Drlg. Co. 1 dry

Completions	4
Production	485
Dry holes	2

PALO PINTO COUNTY

Stuart, T. P. Coal & Oil Co. 158 50
Stuart, Atlantic Oil Prod. Co. 1 ..... gas
Harbin, Nelson Oil Syndicate 1 ..... dry

Completions	3
Production	50
Gas production	5,000,000
Dry holes	1

THROCKMORTON COUNTY

Whitaker, Humble Oil & Ref. Co. 1 ... dry

SHACKELFORD COUNTY

J. B. Matthews, Earl & Dull 2 580
C. Flippin, Marland Production Co. 1 .. dry
Davis, Petroleum Producers Co. 1 60
W. I. Cook-A, Section 61, Roeser & Pendleton 29 100
W. I. Cook-A, Section 83, Roeser & Pendleton 4 110
W. I. Cook-B, Section 61, Roeser & Pendleton 8 90
J. B. Matthews, Section 58, Tannehill et al 10 25
W. H. Breen, Atlantic Oil Producing Co. 1 ..... dry
C. Flippin-B, Cranfill & Reynolds 2 .. dry
J. H. Nail, Midsun Oil Corp. 2 ..... dry
H. A. Lones, Simms Petroleum Co. 3 .. 50
J. B. Matthews, Section 29, Tannehill et al 1 ..... dry
Flippin-C, Cranfill & Reynolds 1 7
Flippin-C, Cranfill & Reynolds 2 10
J. B. Matthews, Ohio-Texas Oil Co. 9 .. 528
J. B. Matthews, Ohio-Texas Oil Co. 10. 1210
W. I. Cook-A, Section 60, Roeser & Pendleton 86 30
W. I. Cook-A, Section 61, Roeser & Pendleton 31 50
W. I. Cook-A, Section 61, Roeser & Pendleton 32 50
W. I. Cook-A, Section 62, Roeser & Pendleton 12 75
Jeter, Big State Oil Co. 1 ..... dry
J. B. Matthews, Earl & Dull 3 603
W. I. Cook-A, Section 83, Roeser & Pendleton 5 97
J. B. Matthews, Tennent et al 1 ..... dry

Completions	24
Production	3675
Dry holes	7

STEPHENS COUNTY

Hamil, Hickok Prod. & Dev. Co. 2 .... gas
Tomilson, Texas-La. Power Co. 1 ..... dry
J. M. Gholson et al, Gulf Prod. Co. 2 .. gas
Keathley, Glenridge Oil Corp. 1 ..... gas
Houston, Hanlon Gasoline Co. 4 ..... dry
Ledbetter, McArthur & Maxwell 1 ..... dry
Dixon, Pace & Ward et al 1 ..... dry
Veale, T. P. Coal & Oil Co. 12 2

Completions	8
Production	2
Gas production	11,541,000
Dry holes	4

WICHITA COUNTY

Kemp & Kempner, Coleman & Coppock 18 90
M. P. Bishop, Comar Oil Co. & Prairie Oil & Gas Co. 2 55
S. H. McCarty-C, W. H. Hammon et al 13 35
Kemp & Kempner, Holbrook & Wood 27 518
S. H. McCarty, Lease 3, Mrs. R. A. Lanning, admx., 8 25
S. H. McCarty, Lease 3, Mrs. R. A. Lanning, admx., 9 ..... dry
Kemp & Kempner, Staley & Wynne 8 .. 548
W. L. Hodges-A, United Producers Co. 5 10
W. L. Hodges-B, United Producers Co. 2 50
Munger-A, Continental Oil Co. & Hammond 1 3
Waggoner Bros., Cooper & Mischler 14 dry
Mitchell, Hammon & Garrett 5 27
W. H. Taylor, Humble Oil & Refining Co. 4 150
H. B. Hines, J. T. Lobbin et al 1 3
Viles, Magnolia Petroleum Co. 21 ..... dry
Kemp & Kempner, Staley & Wynne 9.. 125
W. L. Hodges-A, United Producers Co. 6 320
J. L. Waggoner et al-D, Gulf Production Co. 7 ..... dry
Kemp & Kempner, Coleman & Coppock 19 350
W. H. Taylor, Humble Oil & Refining Co. 5 350
W. H. Taylor, Humble Oil & Refining Co. 6 300
S. H. McCarty, Lease 3, Mrs. R. A. Lanning, admx., 6 60
Munger-A, Continental Oil Co. & Hammond 2 ..... dry
J. E. Roller, Goldsmith et al 1 ..... dry
McCarty-D, Hammon & Garrett 6 30
S. Mitchell et al, Hammon & Garrett 6 81
Kemp & Kempner, Holbrook & Wood 28 40
Kemp & Kempner, Holbrook & Wood 29 150
Burnett, Panhandle Refining Co. & Hines 4 100
Martin, Regal Oil Co. et al 2 5
Boyd, Seaboard & Prairie Oil & Gas Co. 3 ..... dry
L. C. Denny, Shell Petroleum Corp. 3 .. dry
Kemp & Kempner, Staley & Wynne 10. 375
Allen & Kemp, United Producers Co. 2 92
W. L. Hodges-A, United Producers Co. 7 128
W. L. Hodges-A, United Producers Co. 8 160

Completions	36
Production	4180
Dry holes	8

WILBARGER COUNTY

W. T. Waggoner-B, Baker et al 10 175
Hauser, Consolidated Oil Co. 1 ..... dry
W. T. Waggoner-C, Derby Oil Co. 1 .... dry
W. T. Waggoner-S, Fain-McGaha Oil Corp. 22 200
W. T. Waggoner-B, E. B. Lawson 12 .. 5
W. T. Waggoner-Dorothy, Phillips Petroleum Co. 5 8
W. T. Waggoner-OO, Phillips Petroleum Co. 5 12
W. T. Waggoner-B, The Texas Co. 9 ... 90
W. T. Waggoner-H, Waggoner Refining Co. 12 150
W. T. Waggoner-H, Waggoner Refining Co. 13 210
W. T. Waggoner-F, Burton & Shaw 1.. dry
W. T. Waggoner-I, Golding-Cochran et al 1 ..... dry
W. T. Waggoner, The Texas Company & Staley-Wynne 1 ..... dry
W. T. Waggoner-G, Waggoner Refining Co. 5 100
W. T. Waggoner-G, Waggoner Refining Co. 7 240
W. T. Waggoner-H, Waggoner Refining Co. 7-A 225
W. T. Waggoner-H, Waggoner Refining Co. 14 165
W. T. Waggoner, American Refining Co. Properties 1 ..... dry
W. T. Waggoner, Archer Drilling Co. 1 dry
W. T. Waggoner-D, Baker et al 1 .... dry
W. T. Waggoner-C, Barkley & Meadows 8 25
W. T. Waggoner-B, Cosden & Co. 31 ... 80
W. T. Waggoner-B, Cosden & Co. 32 .. 50
W. T. Waggoner-B, Easter Oil Co. 1... 100
W. T. Waggoner-S, Fain-McGaha Oil Corp. 26 50
W. T. Waggoner-B, J. E. McKanna, Agent, 4 327
R. Rainwater, J. O'Neil 1 ..... dry
W. T. Waggoner-A, Prairie Oil & Gas Co. 10 12
W. T. Waggoner-A, Robertson et al 3 dry
W. T. Waggoner-E, Waggoner Refining Co. 12 35
W. T. Waggoner-I, Waggoner Refining Co. 6 100
W. T. Waggoner-I, Waggoner Refining Co. 7 250
W. T. Waggoner-DD, Fain-McGaha Oil Corp. 1 160
W. T. Waggoner-S, Fain-McGaha Oil Corp. 27 500
W. T. Waggoner-S, Fain-McGaha Oil Corp. 28 400
W. T. Waggoner-S, Fain-McGaha Oil Corp. 29 600
W. T. Waggoner-K, Waggoner Refining Co. 1 52

Completions	37
Production	4121
Dry holes	10

YOUNG COUNTY

R. L. Watson-B, Holbrook & Woods 6. dry
J. W. Bullock et al, Gulf Production Co. 1 ..... dry
Simmons, Meredith 1 ..... dry
Eichelberger, Rhodes et al 1 ..... dry
O. L. Sweet, Riggs et al 9 15
Dunan, A. Strachen 1 ..... dry
R. Campbell-F, Fain-McGaha Oil Corp. 2 ..... dry
3 ..... dry
Baker, Pennell et al 1 ..... dry
Boley, Petroleum Producers Co. 1 ..... dry
L. Parrish-A, Petroleum Producers Co. 4 25
R. Campbell, Prairie Oil & Gas Co. 5 ... 95
Farmer-B, Wichita Production Co. 1 .. dry
Johnson, Dorian et al 3 8
Kunkel-C, P. F. Gwynn 3 ..... dry
Watson-A, Holbrook & Wood 3 12
Prideaux-C, Panhandle Refining Co. 11. 3
Kunkel, Prairie Oil & Gas Co. 5 75
Campbell, Richards et al 3 15
Petty & Miller, Stafford 1 ..... dry
White, White 2 ..... dry
E. Eichelberger, Wootten & Read 1 .... dry
Fee, E. C. Stovall 11 95
Casey, A. W. Johnston 4 ..... dry
C. W. Johnson-D, Pennell Oil Co. 3 .. dry
Williams, Pennell et al 1 ..... dry
O. L. Sweet, Riggs et al 10 ..... dry
Calvin, Wise & Jackson 3 10
J. Ware-B, Nash & Windfohr 1 40

Completions	28
Production	393
Dry holes	17

PANHANDLE FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Cochran	1	0	1	0
Gray	9	3,818	0	0
Hutchinson	7	330	0	1
Moore	5	2,433	0	0
Wheeler	4	0	0	4
Total Jan.	26	6,581	1	5
Total Dec.	31	2,826	9	4
Difference	5	3,755	8	1

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	S.D.	Ttl.
Carson	13	1	10	
Gray	11	37	9	57
Hutchinson	7	18	3	28
Moore	1	5	2	8
Wheeler	9	11	3	23
Miscellaneous counties.	4	10	6	20
Total Jan.	37	94	24	155
Total Dec.	35	80	36	151
Difference	2	14	12	4

WELLS COMPLETED
COCHRAN COUNTY

C. C. Slaughter, Marland Prod. Co. 1.. dry

GRAY COUNTY

G. H. Saunders, Gulf Prod. Co. 1..... 510
Binkley, McMan O. & G. Co. 2..... 225
G. H. Saunders, Skelly Oil Co. 2..... 840
A. Chapman-B, The Texas Co. 1..... 180
J. B. Bowers-A, Gulf Prod. Co. 6..... 1460
G. H. Saunders, Magnolia Pet. Co. 1... 103
H. M. Davis, Pure Oil Co. 8..... 120
H. M. Davis, Pure Oil Co. 9..... 230
Worley & Reynolds, Wilcox-Pampa Oil Co. 30 150

Completions	9
Production	3818
Gas production	20,000,000

HUTCHINSON COUNTY

J. J. Perkins-Martin, Phillips Pet. 19.. 50
Tom Lewis, Badger Oil Co. 3..... 50
J. M. Sanford, Barnum Oil Co. 1..... 25
J. M. Sanford-Garland, Barnum Oil 1.. 20
J. M. Sanford, Continental Supply Co. 1 gas

J. A. Whittenburg, Sec. 63, Phillips Pet. Co. 11 60
C. R. Garner, Timms et al 2 125

Completions 7
Production 330
Gas production 40,000,000

MOORE COUNTY

J. T. Sneed, Jr.-James, Phillips Pet. 1 310
J. T. Sneed, Jr.-James, Phillips Pet. 2 75
J. T. Sneed, Jr., McMan Oil & Gas Co. 1 205
Armstrong & Byrd, Skelly Oil Co. 5 1108
J. T. Sneed, Jr.-James, Phillips Petroleum Co. 3 785

Completions 5
Production 2433

WHEELER COUNTY

Stuckey, Lone Star Gas Co. 2 ..... gas
T. Trostle, Upham Gas Co. 1 ..... gas
Williams & Laycock, J. O. Whittington 2 ..... gas
Parsons, Wisch Kamper 1 ..... gas

Completions 4
Gas production 137,500,000

GULF COAST FIELDS

GULF COAST
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Barbers Hill	3	2,040	1	0	1	4	5
Batson	3	23	0	0	0	3	3
Big Creek	5	5,280	0	0	0	3	3
Blue Ridge	8	2,760	1	0	1	8	9
Boling	4	725	2	0	4	6	10
Damon M'nd.	1	0	1	0	0	1	1
DeWalt	2	3,100	0	0	1	3	4
Goose Creek	1	15	0	0	0	4	4
High Island	1	0	1	0	0	2	2
Hull	7	1,415	1	1	1	6	7
Humble	1	5,280	0	0	0	4	4
Liberty	21	9,099	2	0	6	15	21
Markham	0	0	0	0	0	1	1
Nash	1	0	1	0	0	3	3
Orange	1	0	1	0	0	3	3
Orchard	1	0	1	0	0	1	1
Pierce Jnct.	7	4,080	1	0	2	9	11
Raccoon B'nd.	3	1,500	1	0	3	6	9
Saratoga	1	80	0	0	1	0	1
Sour Lake	1	0	1	0	0	1	1
Spindletop	9	3,325	1	0	3	12	15
Miscellaneous	14	2,189	10	0	6	31	37
Ttl. Jan.	95	40,911	26	1	29	126	155
Ttl. Dec.	102	36,094	42	1	12	126	138
Difference	7	4,817	16	0	17	0	17

SOUTH LOUISIANA
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Anse LaButte	2	0	2	0	2	0	2
B'yu. Bouillon	4	550	2	0	2	2	4
Edgerly	3	825	0	0	0	1	1
Hackberry	4	1,920	2	0	2	7	9
Jennings	4	116	2	0	2	6	8
Lockport	1	280	0	0	1	7	8
Sorrento	1	0	1	0	1	0	1
Starks	2	0	2	0	0	2	2
Sulphur	3	1,200	2	0	2	4	6
Sweet Lake	0	0	0	0	0	2	2
Vinton	3	20	2	0	0	5	5
Miscellaneous	4	75	3	0	4	15	19
Total Jan.	31	4,986	18	0	16	52	68
Total Dec.	27	7,423	13	0	2	53	55
Difference	4	2,437	5	0	14	1	13
Ttl. Gulf C.	126	45,897	44	1	45	178	223
Total Dec.	129	43,517	55	1	14	179	193
Difference	3	2,380	11	0	31	1	30

GULF COAST
WELLS COMPLETED
BARBERS HILL

Kirby, Bennett Pet. Co. 2 ..... dry
Kirby, Humphreys Corp. 1-C 2000
Richardson, Yount Lee Oil Co. 2 40

Wells completed 3
Production 2040
Abandoned 1

BATSON—HARDIN COUNTY

Trustee, Deutser Oil Co. 18 10
Stateland, East Batson Oil Co. 16 5
Knight, Paraffine Oil Co. 44 8

Wells completed 3
Production 23

BIG CREEK—FORT BEND COUNTY

Davis, Gulf Prod. Co. 23 800
Davis, Gulf Prod. Co. 36 1200
Davis, Gulf Prod. Co. 42 155
Davis, Gulf Prod. Co. 46 3000
Davis, Gulf Prod. Co. 50 125

Wells completed 5
Production 5280

BLUE RIDGE—FORT BEND COUNTY

West-Schenck, J. S. Abercrombie 4 150
Blakely, Gulf Prod. Co. 16-B 150
West-Schenck, Humphreys Corp. 3 460
Robinson, Navarro Oil Co. 8-A ..... abd
Davison, Sinclair O. & G. Co. 3 350
Blakely, South Texas Pet. Co. 4 400
Lafferty, South Texas Pet. Co. 1 1200
Blakely, Watts Oil Co. 8 50

Wells completed 8
Production 2760
Abandoned 1

BOLING—FORT BEND AND WHARTON

Chase, Gulf Prod. Co. 17 450
McCarson, Gulf Prod. Co. 9 ..... abd
Kasparek, Sun Oil Co. 4 275
Taylor, Vacuum Oil Co. 1 ..... abd

Wells completed 4
Production 725
Abandoned 2

DAMON MOUND—BRAZORIA COUNTY

Jackson, Sinclair O. & G. Co. 20 ..... abd

DEWALT—FORT BEND COUNTY

Sugarland, Humble O. & R. Co. 4 1600
Dew, Humble O. & R. Co. 1 1500

Wells completed 2
Production 3100

GOOSE CREEK—HARRIS COUNTY

Jones Stateland, Humble O. & R. 10 15

HIGH ISLAND

Cade, Marrs McLean 11 ..... abd

HULL—LIBERTY COUNTY

Stovall, Big Six Oil Co. 2 15
Barngrover, Empire G. & F. Co. 17 ..... gas
Scarborough, Gulf Prod. Co. 19 150
Guedry, Humble O. & R. Co. 24 250
Dolbear, Republic Prod. Co. 22 500
Dolbear, Republic Prod. Co. 27 500
Hannah fee, The Texas Co. 5 ..... abd

Wells completed 7
Production 1415
Abandoned 1
Gas 1

HUMBLE—HARRIS COUNTY

Morris, South Texas Pet. Co. 1 5280

LIBERTY—LIBERTY COUNTY

Chambers, Gulf Prod. Co. 5 ..... abd
Chambers, Gulf Prod. Co. 7 49
Chambers, Gulf Prod. Co. 8 5
McLean, Gulf Prod. Co. 1 500
McLean, Gulf Prod. Co. 2 2800
McLean, Gulf Prod. Co. 3 500
McLean, Gulf Prod. Co. 4 100
McLean, Gulf Prod. Co. 6 400
Harrison, Navarro Oil Co. 3 90
Mitchell, Sun Oil Co. 14 276
Mitchell, Sun Oil Co. 19 200
Mitchell, Sun Oil Co. 21 300
Mitchell, Sun Oil Co. 22 200
Mitchell, Sun Oil Co. 25 900
Mitchell, Sun Oil Co. 27 675
Mitchell, Sun Oil Co. 28 1000
Mitchell, Sun Oil Co. 30 100
Staiti, The Texas Co. 14 ..... abd
Staiti, The Texas Co. 16 654
Staiti, The Texas Co. 17 60
Mitchell, Yount Lee Oil Co. 13 300

Completions 21
Production 9099
Abandoned 2

NASH—FORT BEND AND BRAZORIA

Wisdom, Rycade Oil Corp. 13 ..... abd

ORANGE—ORANGE COUNTY

Brown, Sun Oil Co. 6 ..... abd

ORCHARD—FORT BEND COUNTY

Moore, Fort Bend Oil Co. 1 ..... abd

PIERCE JUNCTION—HARRIS COUNTY

Stateland, Gulf Prod. Co. 35 80
Dooley, Navarro Oil-Texas Explin. 10 400
Dooley, Navarro Oil-Humble O. & R. 1 350
Whitehead, Superior Oil Corp. 3-B 1200
Moody, Superior Oil Corp. 4-B 800
Fitzsimmons, T. G. Shaw-Texas Explin. Co. 3-E 1250
Fitzsimmons, T. G. Shaw-Texas Explin. Co. 2-D ..... abd

Wells completed 7
Production 4080
Abandoned 1

RACCOON BEND—AUSTIN COUNTY

Bracey, Humble O. & R.-Valley Oil 1-B 1200
Hardy, Humble O. & R.-Valley Oil 1 ..... abd
Beal, Humble O. & R.-Valley Oil 1 300

Wells completed 3
Production 1500
Abandoned 1

SARATOGA—HARDIN COUNTY

B.B.B.&C., Rio Bravo Oil Co. 135 80

SOUR LAKE—HARDIN COUNTY

Jackson, Theis Oil Co. 9 ..... abd

SPINDLETOP—JEFFERSON COUNTY

Gladys City, Yount Lee Oil Co. 15 200
Gladys City, Yount Lee Oil Co. 21 25
Gladys City, Yount Lee Oil Co. 39 450
Gladys City, Yount Lee Oil Co. 53 100
Gladys City, Yount Lee Oil Co. 73 1500
McFaddin, Yount Lee Oil Co. 10 ..... abd
McFaddin, Yount Lee Oil Co. 31 200
McFaddin, Yount Lee Oil Co. 88 700
Fee, Yount Lee Oil Co. 2 150

Wells completed 9
Production 3325
Abandoned 1

MISCELLANEOUS TEXAS

Brazoria County—
Clemens-Davison, Meyer et al 1 ..... abd
Muldoon, Reed & Rucks 4 ..... abd
Allen-Random, Shell Pet. Corp. 1 10
Chambers County—
Lost Lake-Lost River, Pure Oil Co. 2 ..... abd
Colorado County—
Brenton, Humble O. & R. Co. 1 ..... abd
Fort Bend County—
Trone, Gulf Prod. Co. 10 ..... abd
Harris County—
Johnson, Cedar Bayou Oil Co. 1 ..... abd
Adorle-Lobit, Hunt et al 1 ..... abd
Jasper County—
Boykin, Great Lakes Oil Co. 3 40
Boykin, L. A. Painter 1 ..... abd
Jefferson County—
Fannette-Burrell, Gulf Prod. Co. 2 1500
Liberty County—
Davis, The Texas Co. 1 ..... abd
Esperson, Union Explin. Co. 1 ..... abd
Washington County—
Gay Hill-Grote, Sun Oil Co. 1 625

Wells completed 14
Production 2189
Abandoned 10

SOUTH LOUISIANA
WELLS COMPLETED
ANSE LA BUTTE—ST. MARTIN PARISH

Begnaud, Bowie O. & G. Co. 4 ..... abd
Louisiana Pet. Co., Yount Lee Oil Co. 3 ..... abd

Wells completed 2
Abandoned 2

BAYOU BOUILLON—ST. MARTIN PARISH

Atchafalaya fee, Rycade Oil Corp. 4 ..... abd
Bouillon fee, Rycade Oil Corp. 2 250
Bouillon fee, Rycade Oil Corp. 4 300
Bouillon fee, Rycade Oil Corp. 5 ..... abd

Wells completed 4
Production 550
Abandoned 2

EDGERLY—CALCASIEU PARISH

Hill, Drysdall & Savoy 3 800
Moore, Green Oil Co. 5 10
Narroni, Rex Pet. Co. 1 15

Wells completed 3
Production 825

HACKBERRY—CAMERON PARISH

Watkins, Calcasieu Oil Co. 12 720
Breaux, Calcasieu Oil Co. 1 ..... abd
Vallery, Calcasieu Oil Co. 5 1200
School land, Yount Lee Oil Co. 8 ..... abd

Wells completed 4
Production 1920
Abandoned 2

JENNINGS—ACADIA PARISH

Clemont, F. J. Getty 1 56
Martin, Ratcliff Oil Co. 11 60
Rayne, The Texas Co. 4 ..... abd
Crowley, Yount Lee Oil Co. 3 ..... abd

Wells completed 4
Production 116
Abandoned 2

LOCKPORT—CALCASIEU PARISH

Miller, Vacuum Oil-Gulf Ref. Co. 3 280

SORRENTO—ASCENSION PARISH

United, Gulf Ref. Co. 13 ..... abd

STARKS—CALCASIEU PARISH

Lutcher-Moore, Gulf Ref. Co. 12 ..... abd
Lutcher-Moore, Gulf Ref. Co. 13 ..... abd

Wells completed 2
Production 0
Abandoned 2

SULPHUR—CALCASIEU PARISH

Fee, Union Sulphur Co. 733 ..... abd
Fee, Union Sulphur Co. 737 1200
Fee, Union Sulphur Co. 738 ..... abd

Wells completed 8
Production 1200
Abandoned 2

VINTON—CALCASIEU PARISH

Vincent, Edgerly Pet. Co. 5 ..... abd
Grady, Marrs McLean 11 20
Vincent, The Texas Co. ..... abd

Wells completed 3
Production 20
Abandoned 2

MISCELLANEOUS LOUISIANA

Cameron Parish—
Black Bayou-Watkins, Shell Pet. 5 ..... abd
Iberia Parish—
New Iberia-Bernard, La., O. & G. 1 75
LaFourche Parish—
Stark, Gulf Ref. Co. 8 ..... abd
West Feliciana Parish—
Raccourli, Foster & Robinson 1 ..... abd

Wells completed 4
Production 75
Abandoned 3

LOUISIANA-ARKANSAS

NORTH LOUISIANA
Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.	Ttl.
Bienville	2	0	1	1	1	0	1
Bossier	4	0	4	0	1	5	6
Caddo	6	60	2	1	4	19	23
Catahoula	0	0	0	0	0	1	1
Claiborne	0	0	0	0	0	4	4
DeSoto	1	0	1	0	4	7	11
E. Carroll	0	0	0	0	0	1	1
Franklin	0	0	0	0	0	1	1
Grant	0	0	0	0	0	1	1
LaSalle	2	0	2	0	1	0	1
Lincoln	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Morehouse	2	0	0	0	0	1	1
Natchitoches	0	0	0	0	0	1	1
Ouachita	5	0	0	0	0	1	1
Rapides	0	0	0	0	1	5	6
Red River	0	0	0	0	0	2	2
Richland	2	0	0	0	1	2	3
Sabine	0	0	0	0	2	6	8
Tensas	0	0	0	0	2	5	7
Union	1	0	0	0	1	3	4
Webster	7	158	1	5	5	7	12
Total Jan.	32	218	11	17	34	83	117
Total Dec.	41	218	22	15	19	78	97
Difference	9	0	11	2	15	5	20

*Gas production: Bienville, 8,000,000 feet; Caddo, 4,000,000 feet; Morehouse, 12,000,000 feet; Ouachita, 22,500,000 feet; Richland, 59,000,000 feet; Union, 3,500,000 feet; Webster, 40,662,000 feet; total, 149,662,000 feet.

ARKANSAS
Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.	Ttl.
Ashley	1	0	1	0	1	2	3
Bradley	0	0	0	0	0	1	1
Calhoun	0	0	0	0	0	1	1
Chicot	0	0	0	0	0	1	1
Clark	0	0	0	0	0	2	2
Clay	0	0	0	0	0	1	1
Columbia	0	0	0	0	0	1	1
Drew	0	0	0	0	0	4	4
Faulkner	0	0	0	0	1	0	1
Franklin	0	0	0	0	0	1	1
Garland	0	0	0	0	1	0	1
Jackson	0	0	0	0	0	2	2
Johnson	0	0	0	0	0	1	1
Little River	0	0	0	0	0	3	3
Logan	0	0	0	0	0	1	1
Miller	0	0	0	0	0	1	1
Nevada	0	0	0	0	0	1	1
Ouachita	2	29	0	0	1	3	4
Pulaski	3	50	0	0	4	7	11
Union	0	0	0	0	0	1	1
Total Jan.	23	4,043	8	5	12	25	37
Total Dec.	25	4,122	9	5	20	59	79
Difference	22	3,805	11	0	19	59	78
	6	317	2	5	1	0	1

*Gas production: Union County, 187,300,000 feet.

NORTH LOUISIANA
WELLS COMPLETED
BIENVILLE PARISH

21-18- 6 Johnson, W. G. Gray 1 ..... dry
5-16-10 Ashley, W. P. Wallace et al 1 ..... gas

Gas production 8,000,000

BOSSIER PARISH

30-16-11 Horton-Prince, Arkansas Natural Gas Corp. 5 (loc.) ..... abd
31-16-11 Van Hoose, Arkansas Natural Gas Corp. 8-A (drlk.) ..... abd
8-22-11 Bollinger, W. G. Doerne et al 1 ..... dry
25-16-12 Hodges, Palmer Corp. 11-B ..... dry

CADDO PARISH

24-22-15 Hoss, Bayou State Oil 34 ..... dry
13-21-15 Dillon, Dixie Oil Co. 53 ..... dry
14-21-15 Files & Mabry, Dixie Oil 6-B 40
24-21-15 Robertshaw, Magnolia Pet. 18 15
34-21-16 Boisseau, H. M. Mattson 1 5
34-16-12 Whitehurst, Woodley Pet. 3 ..... gas

Wells completed 6
Production 60
Gas 1
Gas production 4,000,000
Dry 2

DESOTO PARISH

5-13-13 Whitaker, R. O. Roy 1 ..... dry

MOREHOUSE PARISH

22-21-4 Crossett, Nat. Gas Prod. Co. 21 ..... gas
15-22-4 Tensas, Southern Carbon Co. 7 ..... gas

Gas production 12,000,000

LASALLE PARISH

7-10-2e Urania, Hartzano Oil Co. 3 ..... dry
13-10-2e King, H. M. Kings 1 ..... dry

OUACHITA PARISH

12-18-3 C. J. Wall, G. E. Jordan 1 ..... gas
11-18-4 Wright, Pipes & Mack 1 ..... gas
43-20-4 Fairbanks, South. Carbon Co. 16 ..... gas
26-20-4 Stevens, United O. & G. Prod. 1 ..... gas
6-18-4 Dee, West Va., O. & G. Co. 6 ..... gas

Gas production 22,500,000

RICHLAND PARISH

5-15-6 Pardue, Ouachita Nat. Gas 4 ..... gas
32-16-6 Sartor, Richland Prod. Co. 1-D ..... gas

Gas production 59,000,000

UNION PARISH

4-19-3 Hodges, Industrial Gas Co. 1 ..... gas

Gas production 3,500,000

WEBSTER PARISH

31-23- 9 Mitchell, Bob Elmore 1 ..... gas
5-22- 9 H. M. Branton, Magnolia Pet. 1 ..... gas
5-22- 9 M. M. Branton, Magnolia Pet. 1 ..... gas
1-22-11 N. Scroggins, Magnolia Pet. 1 ..... gas
34-23-11 Pine Woods, Northwest Louisiana Gas Co. 9 ..... gas
27-21-10 Bodcaw, Ohio Oil Co. 42 ..... dry
28-21-10 Tillman, Palmer Corp. 4 ..... gas

Wells completed 11
Production 11
Gas 1
Gas production 40,662,000
Dry 1

ARKANSAS
WELLS COMPLETED
ASHLEY COUNTY

9-16-7 Holmes, C. E. Harris 1 ..... dry

NEVADA COUNTY

6-14-20 Groves, Humble O. & R. 1-D 14
6-14-20 Groves, Humble O. & R. 2-D 18

OUACHITA COUNTY

24-15-16 Canada, J. E. Crosbie 1 11
24-15-16 Primm, J. E. Crosbie 3 18

UNION COUNTY

10-17-14 Gregory, H. L. Hunt 3 311
6-17-13 Nash, Lion Oil Ref. Co. 3 120
11-17-14 Dumas, Magnolia Pet. Co. 2 15
15-17-14 Gregory, Magnolia Pet. Co. 3 15
7-17-13 J. F. Sample, Marine Oil Co. 2 ..... gas
6-18-13 Smith, Morefield & Tate 1 70
10-17-14 Gregory, C. E. Murdock 1 12
6-17-13 Union Sawmill, C. E. Murdock 2 61
6-17-13 Union Sawmill, C. E. Murdock 3 (loc.) ..... abd
30-16-16 O. T. Murphy est., C. F. Noble 1 (loc.) ..... abd
7-17-13 Alphin, Ohio Oil Co. 1 570
7-17-13 Alphin, Ohio Oil Co. 2 1200
6-17-13 Carroll hrs., Ohio Oil Co. 1 ..... dry
1-17-14 Crain, Ohio Oil Co. 4 ..... dry
6-17-13 Nash, Ohio Oil Co. Acct. 1 1200
15-17-14 L. L. Ward, Ohio Oil Co. 1 ..... gas
9-17-14 M. S. Kelly, Olson Bros. 1 ..... gas
7-17-13 M. H. Nash, Pure Oil Co. 1 ..... dry
9-17-14 Perdue, Rovenger Oil Corp. 1-B ..... gas
11-17-14 Gregory, Rushing et al 7 35
15-17-14 J. M. Gregory, Skelly Oil Co. 1 ..... dry
9-17-14 Kelly, Skelly Oil Co. 1 ..... dry
35-18-15 Powell, Starke et al 1 ..... gas

Wells completed 25
Production 2
Gas 1
Gas production 400
Dry 187,300,000

KENTUCKY-TENNESSEE

KENTUCKY
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs.	Drg.	Ttl.
Warren	4	4	3	1	0	0	4
Allen	7	29	4	0	0	6	6
Barren	1	10	0	0	0	1	1
Ohio	34	699	14	0	3	54	57
Daviess	33	590	14	0	2	41	43
Hancock	2	2	1	0	1	5	6
McLean	1	20	0	0	0	4	4
Henderson	1	25	0	0	0	9	9
Webster	0	0	0	0	0	1	1
Muhlenburg	0	0	0	0	0	2	2
Breckenridge	1	0	1	0	0	2	2
Butler	0	0	0	0	1	3	4
Hopkins	2	0	2	0	0	8	8
Meade	0	0	0	0	0	1	1
Caldwell	0	0	0	0	0	1	1
Trigg	0	0	0	0	0	1	1
Christian	0	0	0	0	0	2	2
Hardin	1	0	1	0	1	1	2
Wayne	4	2	3	0	0	4	4
Powell	1	6	0	0	0	1	1
Estill	10	20	2	0	0	7	7
Lee-Owsley	1	0	0	1	1	1	2
Wolfe	0	0	0	0	0	1	1
Lawrence-Johnson	1	15	0	0	0	1	1
Johnson-Magoffin	1	20	0	0	1	4	5
Floyd-Knott	1	0	0	0	0	1	1
Clay	1	0	1	0	0	1	1
Knox	1	0	1	0	0	1	1
Rowan	1	0	0	1	0	0	1
Menifee	0	0	0	0	0	1	1
Total Jan.	108	1,446	45	2	14	165	181
Total Dec.	128	1,990	44	6	17	190	207
Difference	20	544	1	4	3	22	26

TENNESSEE
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs.	Drg.	Ttl.
Clay	1	0	1	0	2	12	14
Jackson	0	0	0	0	0	2	2
Marshall	0	0	0	0	1	0	1
Decatur	0	0	0	0	0	2	2
Total Jan.	1	0	1	0	3	16	19
Total Dec.	1	0	0	1	4	15	19
Difference	0	0	1	1	1	1	0

KENTUCKY-TENNESSEE
WELLS COMPLETED
WARREN COUNTY

Bowling Green—J. C. Davenport, W. B. Cauble 4 1
C. M. Justice, Ohio Oil 1 1
Harrison, Hall, Bert Winons 1 1
W. L. Taylor, M. V. Hatcher & Co. 1 ..... dry

Wells completed 4
Production 1
Dry 1

ALLEN COUNTY

Scottsville—T. W. Meader, W. K. White & Son 10 25

Lunchford Beam, D. D. Defenbaugh 1, 2 ..... dry
W. L. Nitcher, Geo. L. Porter 1 ..... dry
D. Welch, Harley & Coatsworth 2 ..... dry
T. J. Oliver, Snowden-McSweeney 34 3
J. B. Williams, J. D. White 10 1

Wells completed 7
Production 29
Dry 3

OHIO COUNTY

Hartford—A. Gilmore, Rough Creek Oil ..... dry
E. L. Patton, Ohio Oil 5 10
E. L. Patton, Ohio Oil 6 16
J. C. Ellis, Ohio Oil 20 50
Chas. Roach, C. H. Tremor & Co. 1 60
A. A. Carter, Fred Evans & Co. 1 75
C. A. Duke, Wood Oil, Inc. 6 50
C. A. Duke, Wood Oil, Inc. 7 40
J. C. Ralph, Wood Oil, Inc. 5 30
J. C. Smith, Wood Oil Co., Inc. 7 50
Geo. Russell, Sunnydale O. & G. 1 ..... dry
T. H. Smith, Sunnydale O. & G. 1 ..... dry
Baker Bros., Arnold & Co. 2 3
Nancy Farmer, Dr. F. M. Sirman 7 50
Nancy Farmer, Dr. F. M. Sirman 8 35
Nancy Farmer, Dr. F. M. Sirman 9 35
Mary Cundiff, J. C. Ellis 7 50
R. L. Gossett, J. C. Ellis 11 50
C. D. Westerfield, Creek Drilling 4 30
C. D. Westerfield, Creek Drilling 5 ..... dry
O. Westerfield, D. T. Bolling 2 15
M. Roach, Ray Bigler & Co. ..... dry
Arella Ralph, Snowden-McSweeney 4 ..... dry
E. Ford, Leeper Oil 4 ..... dry
Bob Hamilton, 100-ac., Cumberland Pet. 14 ..... dry
Ed Hendricks, Bigler & Becker 7 ..... dry
Tom Howard, Carpenter & Co. 1 30
Ira Moseley, J. C. Ellis 3 ..... dry
C. R. Keith, J. C. Ellis 10 15
C. R. Keith, J. C. Ellis & Co. 11 ..... dry
H. C. Ford, Chester Oil 1 5
J. W. Whittaker, Lyle, French & Co. 6, 7 ..... dry
Ada Kelley, J. E. Marsh & Co. 4 ..... dry

Wells completed 34
Production 699
Dry 14

DAVIESS COUNTY

Owensboro—R. F. Sands, Wood Oil, Inc. 3 ..... dry
A. Feldspaugh, C. E. Daugherty 2 ..... dry
A. Feldspaugh, C. E. Daugherty 3 15
Emmitt Burton, Daley & Lowman 2 ..... dry
Christian hrs., C. E. Daugherty 4 15
W. A. Murray, Eastern Gulf Oil 6 30
H. B. Trodgen, Evans & Garrison 3 25
Whitesville Bank, Smith, Randolph & Co. 1 10
Marion Taylor, Pops Development 2 35
Marion Taylor, Pops Development 3 35
K. N. Yelser, L. C. Young 6 100
Widow Miller, Huff & Calderwood 1 ..... dry
Mrs. Bell Salmon, Huff & Calderwood 2 30
Herbert Salmon, Batton, Young & Co. 1 20
Salmon, Stimson & Henry 1 ..... dry
Homer Crossler, Weideman Oil 1 5
Frank Higdon, Ohio Oil 1 35
Irwin-Slagle, Red Hill Oil 6 ..... dry
Geo. Tinsley, Wittmer O. & G. 1 ..... dry
A. K. Hite, H. C. Smith & Co. 1 ..... dry
Panther Creek Land, Penn.-Indiana Oil 1 ..... dry
Lawson Howard, Watts & Brewer 4 35
Lawson Howard, Watts & Brewer 5 35
E. L. Burns, The Petroleum Co. 9 25
E. L. Burns, The Petroleum Co. 10 30
Oscar Wells, Smith, Randolph & Co. 6 20
Emmitt Burton, Daley & Lowman 3 100
Asher hrs., Thompson & Co. 1 ..... dry
U. M. Barrett, Pet. Explrn. 1 ..... dry
Jeff Leet, Creek Drilling 3 90
Dutch Tompkins, Creek Drlg. 10 ..... dry
C. D. Veach, Leeper Oil 5 ..... dry
Jim Cooper, Wood Oil, Inc. 1 ..... dry

Wells completed 33
Production 590
Dry 14

HANCOCK COUNTY

Pellville—Edward Baize, Sears & Co. 1 2
Rena Brown, B. Calvert 1 ..... dry

Wells completed 2
Production 2
Dry 1

McLEAN COUNTY

Calhoun—G. B. McManna, Ohio Oil 1 20

HENDERSON COUNTY

Niagara—Wm. Triplett, R. F. Shirecliffe 1 25

BRECKENRIDGE COUNTY

Sample—John Gibson, C. L. Dunbar 1 ..... dry

HOPKINS COUNTY

Madisonville—Red Brown, Dexter, Pratt & Co. 1 ..... dry
Unknown, Wm. Higgins 1 ..... dry

Wells completed 2
Dry 2

HARDIN COUNTY

Elizabethtown—Dunnaway, Pet. Explrn. 1 ..... dry

WAYNE COUNTY

Dist. 2—H. E. Coffey, Coffey Oil 1 ..... dry
Miller Bros., Wood Oil, Inc., 67 2
Dist. 3—Mack Koger, Work & Krell 1 ..... dry
Dist. 5—Coffey-Oatts, Porter, Abbott & Co. 9 ..... dry

Wells completed 4
Dry 3
Production 2

ALABAMA

Summary of Rigs and Wells Drilling

	Rigs	Dig.	Ttl.
Houston	0	1	1
Lawrence	0	2	2
Marion	0	1	1
Washington	0	3	3
Total Jan.	0	7	7
Total Dec.	0	6	6
Difference	0	1	1

MISSISSIPPI

Summary of Rigs and Wells Drilling

	Rigs	Dig.	Ttl.
Alcorn	0	1	1
Calhoun	0	1	1
Chickasaw	0	1	1
Claiborne	0	2	2
Hinds	3	1	4
Itawamba	0	1	1
Jackson	0	1	1
Jasper	0	1	1
Lauderdale	1	0	1
Lee	0	1	1
Monroe	2	7	9
Rankin	1	1	2
Sharkey	0	1	1
Simpson	0	1	1
Stone	0	1	1
Washington	0	1	1
Webster	0	1	1
Total Jan.	7	23	30
Total Dec.	3	21	24
Difference	4	2	6

EAST TEXAS

Summary of Field Operations

	Com.	Prd.	Dry	Gas*	Rgs.	Dg.	Ttl.
Bowie	0	0	0	0	1	1	
Camp	0	0	0	0	0	1	1
Cass	0	0	0	0	0	1	1
Harrison	1	0	0	1	1	1	2
Panola	7	0	2	5	5	8	13
Red River	1	0	1	0	0	3	3
Shelby	0	0	0	0	0	2	2
Total Jan.	9	0	3	6	6	17	23
Total Dec.	5	0	2	3	4	21	25
Difference	4	0	1	3	2	4	2

*Gas production: Harrison, 1,000,000 feet; Panola, 67,266,000 feet; total, 68,266,000 feet.

WELLS COMPLETED
HARRISON COUNTY

Jas. Short Sur.: Furrh, Nick Barbare, 4-A-2 ..... gas
Gas production 1,000,000

PANOLA COUNTY

J. L. Matthews Sur.: Lawless, S. H. Gardner et al 1 ..... gas
B. C. Jordan Sur.: Lula Fletcher, Magnolia Pet. Co. 2 ..... gas
Jas. Asher Sur.: J. C. Sheehan, Magnolia Pet. Co. 1 ..... dry
B. C. Jordan Sur.: Steele, Magnolia Pet. Co. 2 ..... dry
B. C. Jordan Sur.: Roquemore, Natural Gas Prod. Co. 3 ..... gas
S. B. Lacey Sur.: T. C. Adams, The Texas Co. 7-A ..... gas
B. C. Jordan Sur.: Crenshaw, D. Thomason 12 ..... gas

Wells completed 7
Gas 5
Gas production 67,266,000
Dry 2

RED RIVER COUNTY

Lawson Moore Sur.: W. H. Atkinson, Bert Longenheim 1 ..... dry

ROCKY MOUNTAIN AREA

WYOMING

Summary of Field Operations

Dist. or County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Salt Creek	1	31	0	0	3	4	7
Albany	1	0	1	0	0	0	0
Big Horn	0	0	0	0	1	11	12
Carbon	1	120	0	0	0	13	13
Fremont	0	0	0	0	3	9	12
Hot Springs	0	0	0	0	1	3	4
Johnson	0	0	0	0	0	4	4
Lincoln	0	0	0	0	1	7	8
Natrona (ex. Salt Creek)	0	0	0	0	4	3	7
Park	1	500	0	0	3	33	36
Sweetwater	0	0	0	0	2	10	12
Sublet	0	0	0	0	1	23	24
Uinta	0	0	0	0	5	11	16
Miscellaneous	0	0	0	0	4	13	17
Total Jan.	4	651	1	0	28	144	172
Total Dec.	17	1,152	4	4	33	141	174
Difference	13	501	3	4	5	3	2

MONTANA

Summary of Field Operations

Dist.—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Cat Creek	0	0	0	0	3	3	3
K'vin Sunb't.	10	810	3	0	10	13	23
Pondera	16	1,698	0	0	6	19	25
Miscel.	0	0	0	0	4	70	74
Total Jan.	26	2,508	3	0	20	105	125
Total Dec.	45	1,970	14	6	22	117	139
Difference	19	538	11	6	2	12	14

COLORADO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Bent	0	0	0	0	2	2	2
Fremont	2	25	1	0	1	15	16
Larimer	1	756	0	0	1	6	7
Las Animas	0	0	0	0	1	2	3
Moffat	0	0	0	0	4	8	12
Routt	2	257	0	0	2	6	8
Miscellaneous	0	0	0	0	0	36	36
Total Jan.	5	1,048	1	0	9	75	84
Total Dec.	11	253	7	0	12	77	89
Difference	6	795	6	0	3	2	5

UTAH

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Box Elder	0	0	0	0	3	3	3
Grand	0	0	0	0	0	8	8
San Juan	0	0	0	0	1	2	3
Uinta	1	0	1	0	1	5	6
Utah	1	0	1	0	0	1	1
Miscellaneous	0	0	0	0	1	11	12
Total Jan.	2	0	2	0	3	30	33
Total Dec.	2	0	1	1	3	32	35
Difference	0	0	1	1	0	2	2

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Chaves	0	0	0	0	2	3	5
De Baca	0	0	0	0	0	3	3
Eddy	0	0	0	0	2	7	9
Guadalupe	1	0	1	0	0	1	1
Lea	3	0	2	1	7	22	29
McKinley	0	0	0	0	0	9	9
Rosevelt	0	0	0	0	3	0	3
San Juan	1	0	1	0	4	18	22
San Miguel	0	0	0	0	2	2	4
Torrance	0	0	0	0	1	5	6
Miscellaneous	0	0	0	0	0	10	10
Total Jan.	5	0	4	1	21	80	101
Total Dec.	9	700	7	1	19	79	98
Difference	4	700	3	0	2	1	3

WELLS COMPLETED
WYOMING
WELLS COMPLETED

23-40-79 SW Midwest Oil Co. 1-SD-2 31
1-16-76 Herricks, Union of California 1 ..... dry
5-19-78 H. & C., Ohio Oil Co. 7 120
7-51-100 Klindt, Cody Petroleum 6 500

Wells completed 4
Production 651
Dry and abandoned 1

MONTANA

28-35-1 Dipple, Adams Co., trustee 2 20
12-34-2 Storm, Armsted Oil 2 ..... dry
23-35-3 Sohn, B. A. S. Aronow 1 15
13-34-2 Mort on, A. H. Campbell 2 700
20-35-1 Zachor, Marias River Synd. 6 25
19-35-1 Kalispell-Kevin, P. M. K. Oils 12 25
4-34-1 Hocksprung, L. B. O'Neil 1 ..... dry
23-35-2 J. J. Newman, California Co. 5 15
23-35-2 Emmons, California Co. 5 10
29-35-2 Zimmerman, Dakota-Dubuque 4 ..... dry
15-27-4 Gjullin, Continental Dev. Co. 10 250
15-27-4 State Bank, Midwest Refg. 4 113
16-27-4 State, Midwest Refg. 15 190
16-27-4 State, Midwest Refg. 13 100
16-27-4 State, Midwest Refg. 1 110
16-27-4 State, Midwest Refg. 6 100
15-27-4 State Bank, Rice & Burke 10 100
15-27-4 Kingsbury, California Pet. 8 10
9-27-4 Jones, Fulton Pet. 2 150
16-27-4 State, P. & R. Oil Co. 5 35
10-27-4 Copley, Midwest Refg. 31 50
14-27-4 Wheeler, Continental Dev. 3 40
15-27-4 Copley, P. & R. Oil 2 60
15-27-4 Bank, Rice & Burke 8 50
16-27-4 State, Midwest Refg. 4 240
22-27-4 Munson, Ohio Oil 2 100

Completed 26
Production 2508
Dry 3

COLORADO

WELLS COMPLETED

7-19-69 O. & B., Donnelly Bros. 1 35
11-19-70 Degiacomo, Henry Dickason 1 ..... dry
7-9-68 Gault-Platt, Continental Oil 1 756
17- 6-86 H. Dennis, Texas Prod. Co. 5 160
17- 6-86 H. Dennis, Texas Prod. Co. 2 97

Wells completed 5
Production 1048
Dry and abandoned 1

UTAH

WELLS COMPLETED

29-8s-5e Buskirk, Diamond Oil Co. 3 ..... dry
22-5s-22 Ashley Valley Oil Co. 1 ..... dry

Wells completed 2
Dry and abandoned 2

NEW MEXICO

WELLS COMPLETED

10-2n-17 Goard, Navajo Oil Co. 1 ..... dry
19-26-37 Eaves, Marland Prod. Co. 1 ..... gas
23-26-36 State, Cranfill & Reynolds 1 ..... dry
7-22-34 Slattery, Marland Prod. Co. 1 ..... dry
36-22-14 Midwest Ref. Co. 22 ..... water

Wells completed 5
Gas 42,000,000
Dry and a ndoned 4

EASTERN FIELDS

Summary of Wells Completed

Fields—	Comp.	Prod.	Dry	Gas
Allegany	14	26	0	0
Bradford	148	235	0	0
Middle Field	4	12	0	0
Venango-Clarion	14	27	0	2
Butler-Armstrong	6	6	0	1
S. W. Pennsylvania	13	155	2	5
West Virginia	69	251	14	35
S. E. Ohio	61	1,114	13	10
Totals Jan.	329	1,826	29	53
Totals Dec.	342	1,428	31	73
Difference	13	398	2	20

RIGS AND WELLS DRILLING

District—	Rigs	Drlg.	Total
Allegany	0	17	17
Bradford	23	59	82
Middle Field	0	5	5
Venango-Clarion	2	16	18
Butler-Armstrong	3	14	17
S. W. Pennsylvania	4	25	29
West Virginia	38	103	141
S. E. Ohio	23	70	93
Total Jan.	93	309	402
Total Dec.	103	355	458
Difference	10	46	56

WELLS COMPLETED
Allegany Field

Forest Oil Corp. 4
Dye fee, J. R. & F. N. Messer 2
Miller & Bovaird, J. W. Bucher estate 1
Fee, Lagland Oil 3
McCaffery, McCaffery & 1st Ntl. Olean 2
Brandel heirs, N. V. V. Franchot 2
Fee, Leland Oil 8
Fee, Stephan, Gallets & Buffington 1
Kinley Oil, Staley & Luke 2
Fee, Alfred Ashword 1
Fee, W. J. Hughes, et al. 2
Fee, J. E. LeSuer, et al. 1
Fee, C. C. Brennan, et al. 1
Fee, Macadam Oil Co. 1

Wells Completed 14
Production 26
Dry 0
Gas 0

Bradford Field

Jack, Howard F. & C. Jack 3
Devlin, Korner Brothers 2
Huntington, Evans & Wood 1
Huntington, Evans & Wood 1
Ekas, Dallas Oil 5
Melvin, South Penn. (5 wells) 5
Melvin, South Penn (5 wells) ..... Presure
Middaugh, A. L. & L. M. Lilly 3
Scio, C. A. Duke 2
Fee, E. M. Daly 2
Sanderson, A. Schorman 2
Kenyon, Minnich Brothers 3
Russell, Potter & Devore 3
Irvine, C. E. Potter 2
Howard, Presure Oil 3
Doubleday, Presure Oil 2
Baldwin, F. E. Baldwin 4
Mantz, L. F. Kinley et al 3
Bingham, South Penn 1
Bingham, South Penn 1
Bingham, J. L. Yerdon 3
Fee, Mix Creek Oil ..... water
Fee, Mix Creek Oil 2
Campbell, N. V. V. Franchot 10
Rounds, J. W. Kaufman ..... water
Fee, G. W. Smith estate 10
Rounds, N. V. V. Franchot ..... water
Fee, North Branch Oil 2
D. C. & B., C. A. Duke 5
Potter, Burdick & Stover 3
Bing. 329, Andrus MacDowell, 126 ..... water
Bing 386, McKean Co. Trust Co. et al, 48 1
Bing 389, D. W. Daly, 59 1
Bing 291, Howard McCollum, 92 1
Bing 369, D. W. Daly, 71 1
Bing 151-154, S. P. O. Co., 41 1
Burdick, S. P. O. Co., 013 ..... pressure
Burdick, S. P. O. Co., 04 ..... pressure
Burdick, S. P. O. Co., 61 1
Fee, Hallock & Weston, S. P. O. Co., 103 1
Lot 14, S. P. O. Co., 04 1
H. E. Smith, S. P. O. Co., 178 1
Culbertson Lots, S. P. O. Co., 79 1
H. E. Smith, S. P. O. Co., 180 1
Bing-Satt, S. P. O. Co., 149 1
Bing-Satt, S. P. O. Co., 150 2
Bing-Johnson, S. P. O. Co., 63 1
Bing-Satt, S. P. O. Co., 151 2
Tract 28, Hazelwood Oil Co., 73 1
Tract 23, Hazelwood Oil Co., 114 1
Forest Oil Corp.,8 oil, 1 each
Forest Oil Corp., 8 water, ... pressure
Forest Petroleum Corp., 1 oil
Forest Petroleum Corp., 16 ..... water
W. Weston, Jr. Trustee, South Penn Oil Co. 2
Riddell Estate, South Penn Oil Co. ..2 water
Riddell Estate, South Penn Oil Co. 1
Fee, Mary C. Reidy 3
Fee, W. E. & W. W. Parmeter 2
E. J. Burns, et al., Bliss Oil Co. 1
Fee, W. T. Piper, et al 2
Fee, Park Estate, et al 10
T. H. Kennedy, James W. Looker 2
Fee, Davis Oil Corp. 1
Bingham, D. T. Andrus, et al 15
Fee, Sloan & Zook Producing Co. 3
Fee, Sloan & Zook Producing Co. 3
Fee, Hazelwood Oil Co. 1
Franchot, DeGolier & Nichols 2
Fee, J. A. Walters Estate 6
N. V. V. Franchot, G. W. Crooks Estate 2
Fee, Dana & Dana 2
Fee, Taylor, South Penn Oil Co. 2
Bingham 453, South Penn Oil Co. 3
Fee, W. C. Kennedy Company 1
Fee, C. C. & J. G. McDermott 1
Bingham 151, South Penn Oil Co. 3
Bingham 215, Asociated Producers Co. 3
Bingham 570, South Penn Oil Co. 1
Fee, W. C. Kennedy Company 2
Fee, W. C. Kennedy Company 3
Bingham 186, Hazelwood Oil Co. 2
Fee, T. H. Kennedy No. 6 3
Bingham 390, South Penn Oil Co. 4
Bingham 399, South Penn Oil Co. 2
Bingham 405, South Penn Oil Co. 2
Bingham 499, South Penn Oil Co. 1
Bingham 423, South Penn Oil Co. 4
Bingham 410, South Penn Oil Co. 2
Bingham 576, South Penn Oil Co. 2
Bingham 576, South Penn Oil Co. 2
Melvin, South Penn (5 wells) ..... pressure
Melvin, South Penn (7 wells) 7
Cotton, South Penn 2
Whipple, South Penn 1
Whipple, South Penn ..... pressure
Tract 25, Hazelwood Oil 2
Stinson, W. J. Healy (3 wells) ..... pressure
Stinson, W. J. Healy 1
Tract 5, T. H. Kennedy 1
Tract 13, T. H. Kennedy 1
Willets, L. L. & G. W. Slingerland 1
Gilpin, T. P. Thompson, Jr. 1
Hemlock, C. A. Duke 1
Moore, H. J. Walters 1
Moore, H. J. Walters ..... pressure
Borden, W. T. Piper 1
Boocks, F. M. Boock 1

Wells completed 148
Production 235
Dry 0
Gas 0

Middle Field

McWilliams, Johnson & Nelson 1
Shomonsky, J. Shomonsky 21 1
Lot 106, Perry Oil 13 3
Henry, Hickey & Rieg 11 7

Wells completed 4
Production 12

SOUTHEAST OHIO

WELLS COMPLETED
MONROE COUNTY

Crum, Swasie Oil Co., 1 ..... dry
Zwick, Perry O. & G. Co. 1 3

PERRY COUNTY

Higgins, Dun Mar O. & G. Co. 1 ..... dry
Crist, Preston Oil Co. 2 50
Petty, Planet Oil Co. 2 40
Moore, Ohio F. G. Co. 1 ..... gas
K. Moore, Pure Oil Co. 2 30
Brown, Miller & Co. 1 25
Hocking, Miller, Jewell & Co. 1 25
Veyon, Hopewell F. G. Co. 1 220
Pemberton Bros., Northern Dev. Co. 1 15
Saffel, Preston Oil Co. 1 190

HOCKING COUNTY

Stone, Gordon Oil Co. 7 75
Harding, Strain & Co. 1 30
White, Right O. & G. Co. 2 15
Geiggs, Griffin Prod. Co. 1 10
Marks, Preston Oil Co. 2 40

GUERNSEY COUNTY

Alloway, Blackstone & Co. 3 ..... gas
W. J. Alloway, Preston Oil Co. 1 ..... gas
Wright Bros., Gordon Oil Co. 1 ..... gas

HOLMES COUNTY

Neal, East Ohio Gas Co. 1 ..... gas
Leadbetter, East Ohio Gas Co. 2 ..... dry
Slaubach, Ohio F. G. Co. 1 ..... gas

LICKING COUNTY

Chaney, Hulz & Co. 6 ..... dry
Cullison, Hulz & Co. 1 5
Ashcraft, M. F. Whitehill 5 70
Ashcraft, M. F. Whitehill 6 18
Martin, Emerald Pet. Co. 2 10
Moran, Hulz & Co. 1 5

Ashcraft, Preston Oil Co. 4 5
Long, G. H. Long 6 1

MUSKINGUM COUNTY

Powers, Pure Oil Co. 1 105
Norris, Leonard O. & G. Co. 5 15
Shaw, Ohio F. G. Co. 3 ..... gas
Burrier, Heisey & Co. 2 70

COSHOCTON COUNTY

Mohler, Pure Oil Co. 2 20

KNOX COUNTY

Strong, East Ohio Gas Co. 2 ..... gas

NOBLE COUNTY

Wilson, Nau & Co. 1 ..... dry
Rich, Rich Bros. & Co. 1 7
Carroo, Robinson & Co. 3 2
Mallet, Cain Bros. & Co. 3 2
Heishler, Stephens & Co. 3 2
Smithberger heirs, Elk O. & G. Co. 2 ... 2
Morris, Morris & Co. 1 3
Robins, G. G. Freene 1 2

ATHENS COUNTY

Curtis, Smith & Co. 7 ..... dry
Irwin, Gross & Co. 1 ..... dry

MEIGS COUNTY

Mayhue, Ohio F. S. Co. 2 ..... gas
Stobert, Slaon & Co. 2 ..... dry
Stobert, Slaon & Co. 3 ..... dry
Genheimer, Bank of Colbs 4 5

WASHINGTON COUNTY

Barnett, McVey & Co. 10 ..... gas
Lee, Sr., Reno Oil Co. 10 5
Payne, Newhart & Co. 2 2
Williams, McCauley & Co. 1 ..... dry
Hamminger, Boyle & Co. 14 1
Pope, E. Clark, Jr., 8 ..... dry
Hall heirs, Henderson Oil Co. 1 2
Harris, Schramm & Co. 1 ..... dry
Ward, Schramm & Co. 9 ..... dry

JEFFERSON COUNTY

Wilt, Cubban & Co. 4 2

Wells completed 61
Production 1114
Dry 13
Gas 10

SOUTHWEST PENNSYLVANIA

WELLS COMPLETED
ALLEGHENY COUNTY

Carroll, Walley & Co. 2 5
Hill, H. H. Huff 2 3
Booker, Duff City Gas Co. 2 ..... dry
Petrie, Elizabeth Oil Co. 1 5

BEAVER COUNTY

Economy tract, Laughner Oil Co. 94 ... 10

GREENE COUNTY

Freeland, Freeland & Co. 1 ..... gas
Fordice, Equitable Gas Co. 4 ..... gas
Lantz, Equitable Gas Co. 1 ..... gas
Zimmerman, Peoples Gas Co. 2 ..... gas
Rutan, Carnegie Gas Co. 6 30

WESTMORELAND COUNTY

Levic, Phillips G. & O. Co. 1 ..... dry

BUTLER COUNTY

Trees, J. F. Trees 2 100
Price, Elliott & Reimer 1 ..... gas

Wells completed 13
Production 155
Dry 2
Gas 5

WEST VIRGINIA

WELLS COMPLETED
HARRISON COUNTY

Shahan, Monroe & Raad 1 ..... gas

MARION COUNTY

Grubb, Carnegie Gas Co. 2 ..... gas

MONONGALIA COUNTY

Wise heirs, Pgh. & W. Va. Gas Co. 1.. gas
Eddy, J. H. McDermott 1 ..... gas

WETZEL & TYLER COUNTIES

Hickman, Amer. O. D. Co. 1 ..... gas
Morgan, Rawe & Co. 5 3

MARSHALL COUNTY

Reid, Mfrs. L. & H. Co. 3 ..... gas
Strickland, Cameron H. & L. Co. 3 .... dry
Fry, Mfrs. L. & H. Co. 1 ..... gas

DODDRIDGE COUNTY

Snider, Pgh. & W. Va. G. Co. 1 ..... gas
Shets, W. L. Travis 1 ..... gas

RITCHIE COUNTY

Summers, Pgh. & W. Va. G. Co. 2 ..... gas
Cox, Imperial O. & G. Co. 1 ..... gas
Cox, Ira D. Cox 3 ..... dry
Lambert, So. P. O. Co. 10 2
Rymer, Kelly & Co. 1 ..... dry
Daubenspeck, Mid Penn Oil Co. 3 1
Tennant, Smith & Co. 1 ..... dry
W. Va. tract, G. B. Burk 5 ..... dry
McCullough, Choguill & Co. 5 ..... dry
Duty, Hope Gas Co. 1 ..... gas
Lewis, E. A. and E. P. Mellon 1 ..... gas
Baker, D. O'Day estate 1 3
Mullenex, Reno Oil Co. 10 ..... dry
Bickerstaff, So. P. O. Co. 6 20
Ayers, Frank Beem 3
Ritchie Mines tract, So. P. O. Co. 71 .. 10
Jewell, Aetna O. & G. Co. 1 ..... gas

GILMER COUNTY

Gainer, Gainer Farm O. & G. Co. 4 ..... dry
Mitchell, Park Bowser 3 ..... gas
Joens, A. L. Britton & Co. 1 ..... gas
Miller, Valley O. & G. Co. 1 ..... dry
Huffman, Chartiers Oil Co. 12 ..... gas

CLAY COUNTY

Mullins, Hamilton Gas Co. 1 ..... gas

WOOD COUNTY

Hebrack-Rapp heirs, Oil City Trust Co. 6 3

PLEASANTS COUNTY

Williamson, Albert Neely 2 3
Reynolds, Carter & Rinegart 1 ..... dry

ROANE COUNTY

Stockle, So. P. O. Co. 82 1
Stockle, So. P. O. Co. 86 15
Stockle, So. P. O. Co. 87 35
Stockle, So. P. O. Co. 88 30
Tallman, So. P. O. Co. 2 1
McGuain, U. F. G. Co. 1 ..... dry

CALHOUN COUNTY

Elliott, Virginian G. & O. Co. 1 20
Anderson, Calhoun O. & G. Co. 1 4
Hamilton, L. P. Bickle 1 ..... gas

JACKSON COUNTY

McCarty, So. P. O. Co. 1 85
Hartley, Heck Oil Co. 1 2

LINCOLN COUNTY

Coats, Meabon & Huffman 1 ..... dry
Thomas, U. F. G. Co. 1 ..... gas
H. C. L. & M. Co., U. F. G. Co. 26 ..... gas
Stone, Earl Cameron 3 ..... gas
Vickers, G. T. Ray 2 ..... gas

KANAWHA COUNTY

Jones, Chartiers Oil Co. 1 ..... dry
B. G. & S. tract, U. F. G. Co. 1 ..... gas
Derrick heirs, U. F. G. Co. 1 ..... gas

MINGO COUNTY

Burchett, F. H. Yates 1 ..... gas

BOONE COUNTY

Williams Coal Co., Pure Oil Co. 239 10
Chambers, Hope Gas Co. 1 ..... gas
Little Coal Co., Owens B. & M. Co. 11.. gas
Allen, Owens B. & M. Co. 15 ..... gas

CABELL COUNTY

Howes, Harshbarger O. & G. Co. 1 .... gas
Kline, Harshbarger O. & G. Co. 1 ..... gas
Ross, W. Va. Gas Corp. 19 ..... dry

WAYNE COUNTY

Lincoln Land Assn., U. F. G. Co. 1 ..... gas
Lincoln Land Assn., U. F. G. Co. 2 ..... gas
Osburn, Meabon & Huffman 1 ..... gas

PUTNAM COUNTY

Hodges, Kuhn O. & G. Co. 1 ..... dry

Wells completed 69
Production 251
Dry 14
Gas 35

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashland	11	45	5	4	8	12	20
Medina	2	0	2	0	0	6	6
Lorain	2	0	0	2	4	2	6
Wayne	5	0	1	4	7	7	14
Holmes	7	2	1	5	4	5	9
Cuyahoga	0	0	0	0	1	2	3
Richland	0	0	0	0	0	4	4
Knox	2	0	2	0	1	10	11
Coshocton	2	65	0	0	2	5	7
Summitt	5	0	2	3	1	17	18
Licking	12	114	2	1	10	16	26
Muskingum	4	271	1	1	6	11	17
Athens	13	8	3	8	8	20	28
Meigs	6	12	2	1	5	13	18
Jackson	4	0	2	2	11	8	19
Vinton	0	0	0	0	1	2	3
Stark	1	0	0	1	1	0	1
Lawrence	1	0	1	0	0	3	3
Pickaway	0	0	0	0	0	1	1
Gallia	0	0	0	0	0	1	1
Tuscarawas	0	0	0	0	0	1	1
Fairfield	1	0	0	1	1	3	4
Guernsey	4	0	2	2	7	6	13
Total Jan....	82	517	26	35	78	155	233
Total Dec...	126	759	32	56	72	161	233
Difference ..	44	242	6	21	6	6	0

WELLS COMPLETED
ASHLAND COUNTY

Hanover—R. E. Brown, Ohio Fuel Gas 1-2029 ..... gas
Green—F. E. Milligan, Ohio Fuel Gas 1-3309 ..... gas
J. F. Kettering, Ohio Fuel Gas 1-3321 dry
Vermillion—John Hawks, Robinson & Co. 1 ..... dry
Orange—A. C. Smith, Logan Gas 1-3057 dry
W. T. Albertson, Logan Gas 1-3059 .. gas
J. F. Fluke 15, Kemrow Co. 3 ..... gas
Emma Miller, Kemrow Co. 2 ..... dry
Perry—W. E. Strine, Robinson & Co. 8. 25
Riley Donelson, Robinson & Co. 7... dry
Turman Smith, Miller & Co. 7 20

Wells completed 11
Production 45
Dry 5
Gas 4

MEDINA COUNTY

Montville—L. O. Quayle, Ohio Fuel Gas 1-3349 ..... dry
Hinckley—H. A. Redmond, Ohio Fuel Gas 1-3368 ..... dry

Wells completed 2
Dry 2

LORAIN COUNTY

Grafton—George April, Ohio Fuel Gas 1-3302 ..... gas
Columbia—H. H. Osborne, Ohio Fuel Gas 1-3332 ..... gas

Wells completed 2
Gas 2

WAYNE COUNTY

Congress—Cordilla Fuhrman, Ohio Fuel Gas 1-3046 ..... gas
Doctor Biddle, Harmon & George 1. gas
T. G. McCarty, F. E. Barnhart & Co. 1 ..... dry
Chester—Sarah Landis, Ohio Fuel Gas 2-3394 ..... gas
Sugar Creek—Aaron Saurer, Logan Gas 1-3064 ..... gas

Wells completed 5
Dry 1
Gas 4

HOLMES COUNTY

Paint—David Kurtz, Ohio Fuel Gas 1-3329 ..... gas
Prairie—Cora Smith, Ohio Fuel Gas 1-3031 2
Richland—L. M. Neal, East Ohio Gas 1 gas
G. O. Ledbetter, East Ohio Gas ..... dry
Monroe—S. V. Allison, Lyric Oil & Gas 2 ..... gas
M. G. Bird, Lydic Oil & Gas 4, 5 ... gas

Wells completed 7
Production 2
Dry 1
Gas 5

KNOX COUNTY

Jefferson—M. J. Strang, East Ohio Gas 1 ..... dry
Howard—James Griffith, Harry Perkins 1 ..... dry

Wells completed 2
Dry 2

COSHOCTON COUNTY

Clark—W. H. Mohler, Pure Oil 1 50
Pike—Isaac Norris, Leonard Oil & Gas 3 15

Wells completed 2
Production 65

SUMMITT COUNTY

Franklin—E. A. Raber, F. A. Brendall & Co. 1 ..... gas
C. L. Wilcox, F. A. Brendall & Co. 2 gas
Charles Hollinger, F. A. Brendall & Co. 2 ..... gas
Boston—G. L. Gebauer, East Ohio Gas 1 ..... dry
Spring—Fred Detloff, H. E. Cupler 1.. dry

Wells completed 5
Dry 2
Gas 3

LICKING COUNTY

Fallsburg—Wayland Ashcraft, Preston Oil 2 2
G. W. Moran, Hulse & Kundtz 2 1
John E. Martin, Emerald Petroleum 2 10
Jacob Weiss, Emerald Petroleum 1 .. dry
Perry—Joseph Chaney, Hulse & Kundtz 6 ..... dry
G. C. Mauk, Preston Oil 1 5
James Wright, Preston Oil 11 10
Al-wert Ashcraft, Whitehill Gas 8 10
Albert Ashcraft, Whitehill Gas 3 70
Roy Baughman, H. C. Farmer 5 ..... gas
Emmet Hoover, H. C. Farmer 2 3
Madison—G. H. Long, George H. Long 6 3

Wells completed 12
Production 114
Dry 2
Gas 1

MUSKINGUM COUNTY

Jackson—William Powers, Pure Oil 1. 186
Muskingum—George W. Shaw, Ohio Fuel Gas 3-3347 ..... gas
Springfield — Kerns - Gossuth, William Kline & Co. 1 ..... dry
Hopewell—S. L. Burrier, Heisey Gas 2. 85

Wells completed 4
Production 271
Dry 1
Gas 1

ATHENS COUNTY

Ames—J. T. Fleming, Ohio Fuel Gas 2-3375 ..... gas
G. O. Linscott, Ohio Fuel Gas 1-3364. gas
Vesta Thompson, Crondorff & Co. 1.. gas
O. M. Lovell, Kiggins & Co. 1 ..... gas
Dover—Ohio Colliers, Ohio Fuel Gas 3299 ..... dry
Lee—W. E. Baughman, Logan Gas 1-3061 2
Carthage—Mary Barnhill, Logan Gas 2-3054 6
Frank Guthrie, Logan Gas 2-3062 .. gas
Athens—C. M. Higgins, Athens State Oil & Gas 2 ..... dry
Berne—L. J. Elliott, Ohio Fuel Gas 1-3345 ..... gas
Black Diamond Coal, Ohio Fuel Gas 10-3339 ..... gas
L. W. Wright, McBride & Co. 1 ..... gas
York—D. F. Shafer, Hulse & Kundtz 2 dry

Wells completed 13
Production 8
Dry 3
Gas 8

MEIGS COUNTY

Sutton—John Deer, Pure Oil 1 3
James Stobart, Tyree & Co. 4, 5 .... dry
Chester—W. Genheimer, Frick & Barneby 4 6
Bedford—C. E. Mayhugh, Ohio Fuel Gas 2-3287 ..... gas
Salisbury — Moore - Williamson, Sutton Brothers 1 3

Wells completed 6
Production 12
Dry 1
Gas 1

JACKSON COUNTY

Franklin—James A. McClure, Ohio Fuel Gas 3-3310 ..... gas
J. W. Eubanks, Wheeler & Griffith 1 dry
Lick—Jeff J. Buckley, Ohio Fuel Gas 1-3284 ..... dry
Coal—George N. House, Ohio Fuel Gas 1-3218 ..... gas

Wells completed 4
Dry 2
Gas 2

STARKE COUNTY

Laurence—Jacob Nichter, Cashdollar & Co. 1 ..... gas

LAWRENCE COUNTY

Mason—W. S. Bellville, Ohio Fuel Gas 1-3285 ..... dry

FAIRFIELD COUNTY

Berne—W. M. and H. Brucker, City Natural Gas Works 1 ..... gas

GUERNSEY COUNTY

Cambridge—G. A. Dillon, Ohio Fuel Gas 1-3355 ..... dry
Wheeling—J. C. Alloway, Blackston & Co. 2 ..... gas
W. J. Alloway, Logan Gas 1-3055 ... gas
Westland—George Scott, Kemrow Co. 1 dry

Wells completed 4
Dry 2
Gas 2

LIMA FIELDS

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	1	0	1	0	3	5	8
Hancock	2	45	0	0	0	2	2
Allen	0	0	0	0	2	2	4
Auglaize	0	0	0	0	0	1	1
Mercer	0	0	0	0	0	3	3
Seneca	4	41	1	1	0	4	4
Lucas	0	0	0	0	1	1	2
Ottawa	1	6	0	0	0	0	0
Hardin	0	0	0	0	0	1	1
Darke	0	0	0	0	0	1	1
Huron	0	0	0	0	0	1	1
Total Jan....	8	92	2	1	6	21	27
Total Dec...	16	107	7	1	2	24	26
Difference ..	8	15	5	0	4	3	1

WELLS COMPLETED
WOOD COUNTY

Webster—C. Jameson, Curtis Kameson 1 dry
HANCOCK COUNTY
Biglick — Alva Beard, Robt. Mitchell, Trustee 2 20
Liberty—John Shank, L. Cramer 1 25

Wells completed 2
Production 45

SANDUSKY COUNTY

Woodville—Goodale, Riley Oil 1, 3, 5... abd
Scott—J. F. Hutchinson, Ohio Oil 8 ... abd
M. E. Phister, Ohio Oil 14 ..... abd
S. L. Tyson, Ohio Oil 10 ..... abd
L. Lehman, Ohio Oil 4 ..... abd

Abandoned 7

SENECA COUNTY

Liberty—L. Scherger, W. E. Richards & Co. 2 40
S. Shroder, Muncy Valley Oil & Gas 1 1
Milo Saul, P. T. O'Brien 1 ..... gas
Jackson — John Soule, Columbus-Tiffin Oil 1 ..... dry
J. F. Hartlin, Ohio Oil 4 ..... abd

Wells completed 4
Production 41
Dry 1
Gas 1
Abandoned 1

OTTAWA COUNTY

Harris—Silas Ames, Sherman & Richards 9 6

INDIANA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Adams	0	0	0	0	0	0	0
Gibson	7	66	2	1	1	5	6
Pike	1	0	0	1	0	6	6
Daviess	0	0	0	0	0	3	3
Vigo	1	30	0	0	0	4	4
Sullivan	0	0	0	0	0	4	4
Spenser	3	25	1	0	1	5	6
Dubois	0	0	0	0	0	2	2
Warrick	0	0	0	0	0	2	2
Knox	0	0	0	0	0	2	2
Benton	0	0	0	0	0	1	1
Fountain	0	0	0	0	0	3	3
Monroe	0	0	0	0	0	2	2
Bartholomew	0	0	0	0	0	1	1
Miami	0	0	0	0	0	1	1
Montgomery	0	0	0	0	0	1	1
Wabash	0	0	0	0	0	1	1
Greene	0	0	0	0	0	1	1
Henry	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	1	1
Perry	0	0	0	0	1	1	2
Posey	0	0	0	0	0	1	1
Vanderbury	1	0	1	0	0	1	1
Lagrange	0	0	0	0	0	1	1
Hancock	0	0	0	0	0	1	1
Total Jan....	12	121	4	2	3	47	52
Total Dec...	19	154	8	2	4	47	51
Difference ..	7	33	4	0	1	5	1

WELLS COMPLETED
GIBSON COUNTY

Washington—E. & S. Ewing, Wm. Bell & Co. 1 1
Laura Dillon, Washington Oil Synd. 2 2
C. T. Sloan, Big Four Oil & Gas 1 1
Columbia—R. Hollen, Roxana Pet. 1... dry
V. Wirth, Roxana Pet. 1 ..... dry
Barton—M. & E. Duncan, Gem Oil Corp. 1 1
S. & W. Ferris, Gem Oil Corp. 1 ..... dry
S. & W. Ferris, Gem Oil Corp. 2 ..... dry

Wells completed 5
Production 6
Dry 3
Gas 1
Abandoned 1

PIKE COUNTY

Patoka—A. McRellip, Bowman Oil 1... gas

VIGO COUNTY

Prairie Creek—Pearl Shattuck, Pierce & Co. 3 10

SPENCER COUNTY

Grass—J. C. Kinney heirs, C. Walter Randolph & Co. 1 ..... dry
West of Troy—Arthur Ray, Packard Oil 2 ..... dry

Wells completed 2
Production 1
Dry 1

VANDEBURG COUNTY

Armstrong—Geo. Kraft, Franey & Johnson 1 ..... dry

MICHIGAN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Muskegon	31	6,630	10	6	59	47	106
Isabelle	0	0	0	0	3	3	6
Midland	0	0	0	0	0	4	4
Mason	1	0	0	1	0	3	3
Newaygo	1	0	0	1	1	2	3
Shiawassee	0	0	0	0	0	1	1
Crawford	0	0	0	0	1	0	1
Montcalm	0	0	0	0	0	1	1
Sanilac	0	0	0	0	0	1	1
St. Clair	4	0	4	0	0	0	0
Van Buren	0	0	0	0	2	1	3
Alpena	0	0	0	0	0	2	2
Livingstone	0	0	0	0	0	1	1
Lake	0	0	0	0	0	1	1
Allegan	0	0	0	0	1	0	1
Tuscola	0	0	0	0	0	1	1
Huron	0	0	0	0	0	1	1
Manistee	1	0	1	0	0	0	0
Cass	0	0	0	0	0	1	1
Mecosta	0	0	0	0	0	1	1
Kent	0	0	0	0	2	3	5
Ottawa	0	0	0	0	1	3	4
Oceana	0	0	0	0	2	3	5
Total Jan. ..	37	6,630	15	7	72	79	151
Total Dec. ..	31	3,235	5	4	61	74	135
Difference...	6	3,395	10	3	11	5	16

WELLS COMPLETED
MUSKEGON COUNTY

Muskegon—Becker, Dixie Oil D-2 125
Dierks, Dixie Oil D-2 ..... gas
James Dow, Dixie Oil D-1 ..... gas
James Dow, Dixie Oil D-2 ..... gas
Garrett Kool, Joliet-Morris Dev. 1 .... gas
Burns, Puritan Oil 1 1
Van Allsburg, Johnson Oil & Ref. 2.. dry
Haight, Lima Oil Corp. 2 16
James Papas, Maire-Caswell & Co. 1 dry
Lewis, Concord Oil & Gas 1 100
Giles, Concord Oil & Gas 1 100
Chas. Gilbert, Swastika Oil 1 1100
Stainey Danloff, Muskegon Oil Corp. 1 95
Torrent-Muskegon-Davis-Ottawa Co.'s 1 14
A. & O. Becker, Muskegon-Davis-Ottawa Co.'s 2 ..... dry
McLaughlin, Puritan Co. & Goldboss 1 dry
Jager, Diamond Oil & Gas 1 16
Flentze, E. L. Robinson 1 35
Seiner estate, C. M. Bowers Oil Corp. 2 gas
M. Trierweiler, Commonwealth Oil & Gas 1 ..... dry
Joslyn, Holland Oil & Gas 1 50
G. Peterson, Muskegon-Ottawa Co.'s 1 dry
Fagan, Brien & Brien 2 ..... dry
Giles, L. C. Kenney & Co. 1 600
Laketon—Dr. A. B. Lee, C. M. Bowers Oil Corp. 1 ..... dry
Geboo, Paragon Oil 1 ..... dry
J. Dick, Hughett Oil 1 1500
W. Lauenstein, Royal Oil 1 100
R. Andree, Nelson & Witt 1 400
H. Hewitt, Eureka Oil & Gas 1 1500
C. Phelps, Laketon Oil 1 ..... dry

Wells completed 21
Production 6930
Dry 14
Gas 4

MASON COUNTY

Logan—Welsh-Taggart 1 ..... gas

ST. CLAIR COUNTY

Port Huron—S. W. of Blaine, Michigan Pet. 1 ..... dry
West of St. Clair, St. Clair O. & G. 1 dry
West of St. Clair, St. Clair O. & G. 1 dry

S. W. of St. Clair, St. Clair O. & G. 1 dry

Wells completed 4
Dry 4

MANISTEE COUNTY

Near Manistee—Ruggles & Rolemaker 1 dry

POWELL COUNTY

District 15—Bert Hall, James McCoy Oil 2 6

ESTILL COUNTY

District 7—H. C. Stewart, Adma Oil Co. 15 1
Clayburn Tipton, Superior Oil Corp. 14 1
District 8—Thos. Henderson, Superior Oil Corp. 28 5
Thos. Henderson, Superior Oil Corp. 29 ..... dry
James Griffin, Superior Oil Corp. 9.. dry
James Griffin, Superior Oil Corp. 10.. 2
A. F. West & Co., Superior Oil 22.... 3
A. F. West & Co., Superior Oil 23.... 3
District 10—W. P. Isaac, Kelley Fulks 5 2
Wm. Cox, A. J. Calvert 11 3

Wells completed 10
Production 20
Dry 2

LEE-OWSLEY COUNTIES

Owsley—J. N. Tackett, Petroleum Exploration 1 ..... gas

LAWRENCE-JOHNSON COUNTIES

District 32—Sanford Lyons, Swiss Oil Corp. 33 15

JOHNSON-MAGOFFIN COUNTIES

District 31—J. M. Frazier, Hupp, Duff & Co. 6 20

CLAY COUNTY

Little Goose Creek—Robt. Culp, Petroleum Exploration 1 ..... dry

KNOX COUNTY

Red Bird Creek—Unknown parties 1 .. dry

ROWAN COUNTY

Mt. Sterling—Sugar Loaf Hill, E. R. Maggard & Co. 1 ..... gas

TENNESSEE
WELLS COMPLETED
CLAY COUNTY

Celina—Coulson, Unknown parties 1 ... dry

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	1	0	1	0	0	3	3
Crawford	6	46	1	1	1	5	6
Lawrence	2	95	0	0	0	2	2
Wabash	6	265	3	0	2	1	3
St. Clair	1	105	0	0	0	1	1
Total Jan...	16	511	5	1	3	12	15
Total Dec..	14	98	8	0	3	11	14
Difference .	2	413	3	1	0	1	1

WELLS COMPLETED
CLARK COUNTY

York—S. C. Prevo, Snavely, Holmes & Co. 1 ..... dry

CRAWFORD COUNTY

Southwest—J. & F. Price, Dark Bend Oil 3 5
A. W. Mann, W. C. McBride, Inc., 4.. 11
Honey Creek—A. W. Mann, W. C. McBride, Inc., 3 18
Lafe Goff, Edward Kerlin 1 ..... gas
R. Brownfield, R. W. Moore & Co. 1. dry
Prairie—J. P. Evans, J. F. Bolinger 3.. 12

Wells completed 6
Production 46
Dry 1
Gas 1

LAWRENCE COUNTY

Petty—L. B. Nuttall, Ohio Oil 8 15
J. W. Armitage, Snowden-McSweeney 8 ..... abd
Dennison—Logan Vandermark, Ohio Oil 4 80
Bridgeport—Althea Griggs' No. 1, Ohio Oil 1, 5 ..... abd
Lawrence—D. B. Whittake, Ohio Oil 1, 3, 7 ..... abd

Wells completed 2
Production 95
Abandoned 6

WABASH COUNTY

Wabash—W. M. Price, Ridge Farm Oil 4 150
L. G. Stillwell, Boeger Oil 2 100
Kogan heirs, Mayhugh & Co. 15 15
A. Prout, Leighty Oil 1 ..... dry
F. M. Leek, Mt. Carmel Oil 8 ..... dry
L. G. Stillwell, Adams Corner Oil 1.... dry

Wells completed 6
Production 265
Dry 3

ST. CLAIR COUNTY

Sugar Loaf—Matilda Dyroff, Ohio Oil 1 105

OIL IN PUBLIC DOMAIN REVIEWED BY SURVEY

On the public domain, says the Geological Survey, there are 30,000,000 acres of coal land which contain 200,000,000,000 tons of fuel for the future. There are 65 developed oil and gas fields with an annual production of 33,000,000 bbls. of oil. There are 4,000,000 acres of oil shale from which possibly 60,000,000,000 bbls. of oil can be extracted when high prices arrive to warrant the higher cost.

From the passage of the mineral leasing law in 1920 to June 30, 1928, 197,000,000 bbls. of oil has been produced from public lands under government lease or permit, of which more than 23,000,000 bbls. was produced in the fiscal year ended June 30, 1928.

Last year the oil and gas rights in a tract of 160 acres of public land were disposed of for $420,000, in addition to which the government will probably receive a royalty of $1,000,000 or more on the oil and gas when they are produced. At the end of the fiscal year 1928 nearly 22,000 mineral permits, leases and licenses were under supervision by the Geological Survey. Certain supervisory work in connection with the naval petroleum reserves is done by the survey on behalf of the Bureau of Engineering, Department of the Navy, and similar work in connection with some Indian reservations is done on behalf of the Office of Indian Affairs. The royalties from oil produced on naval petroleum reserves and Indian lands for the year ended June 30, 1928, amounted to over $9,000,000.

Oil on the public domain, says the Department of the Interior, yields the government a greater return than do all other sources of income from what is left of its public lands combined. Last year, according to figures just compiled by the General Land Office, $4,280,000 was derived from oil and gas leases. About $330,000 was brought in from mineral leases which is less than 10 per cent of the returns from oil. The sales of public lands which, for generations yielded handsome returns, last year were but about half as great as from oil leases alone. The receipts for 1928 were less than those for 1927, but this was caused largely by the low price of oil and a reduction in the production of oil.

MAINTAIN CALIFORNIA PRICES

California oil prices will be maintained unless there should be another cut in the Mid-Continent schedule, says E. B. Reeser, president of the Barnsdall Corp., and president of the American Petroleum Institute.

"Santa Fe Springs Field will reach a peak of not more than 275,000 bbls. daily late in February," says Mr. Reeser, "and decline after that. Present production of the Elwood Pool in Santa Barbara County is 23,000 bbls. daily, with the new Barnsdall well the best in the field. Opinion is quite general that there will not be any cut in California light crude unless an additional cut is made in Mid-Continent grades."

LEGAL

DEPARTMENT OF THE INTERIOR

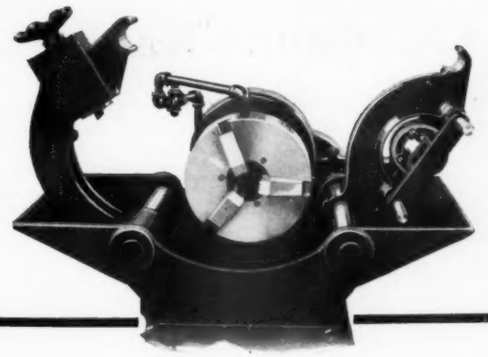
Call for Bids

To Purchase Government Royalty Oil from SE¼, Sec. 2, T. 22s, R. 17e, M. D. M., Kettleman Hills Oil Field, California (Milham Exploration Company).

Pursuant to the provisions of Section 36 of the act of Congress approved February 25, 1920 (41 Stat., 437), sealed proposals in duplicate will be received in the office of the Secretary of the Interior, Interior Department Building, Washington, D. C., on or before noon of March 1, 1929, from responsible bidders for the purchase for a period of one year beginning April 1, 1929, of royalty oil accruing to the United States (at present from one well) from the SE¼, Sec. 2, T. 22 S., R. 17 E., M.D.M., in the Kettleman Hills Oil Field, California, held by the Milham Exploration Company. The approximate quality of the oil to be sold is indicated by the following results obtained from a laboratory test: gravity, about 59 degrees A.P.I.; 89 per cent gasoline stock (437° F.); 8 per cent kerosene and fuel oil; 3 per cent distillation loss. The Government's royalty oil amounts to approximately 200 barrels a day and will probably suffer gradual decline until additional producing wells are drilled upon the tract. Bids must be based upon the highest posted field price for oil of 25.0 to 25.9 A.P.I. gravity in the Midway-Sunset field, California, and must be stated as a differential in cents per barrel from such posted price. Delivery of royalty oil will be made without cost to the Government on the said SE¼, Sec. 2, for the account of the successful bidder by segregation in royalty tanks or by direct pipe line run as an undivided portion of production as the Government may elect. Payments for the royalty oil are to be made to the Register of the United States Land Office at Sacramento, California, on or before the fifteenth (15th) day of each month following that in which delivery is made, the quantity of the oil to be determined by tank measurement corrected for impurities found by test and the volume computed in terms of standard barrels at 60° F. Each bid must be accompanied by a certified check payable to the order of the Secretary of the Interior, in the sum of $1,000 as a guarantee that the bidder will, if successful, promptly execute a satisfactory contract and furnish a bond in the sum of $40,000 conditioned upon full and complete compliance with the terms of the contract. The Secretary of the Interior may accept any bid which in his judgment is most advantageous to the Government, and reserves the right to reject all bids. Sealed bids are to be submitted to the Secretary, Department of the Interior, Washington, D. C., the envelope to be marked plainly, "Bid on Kettleman Hills royalty oil." No bid received after the time herein fixed for submitted bids will be considered. Additional information can be obtained from the Geological Survey, Department of the Interior, Washington, D. C., or from the field office of the Geological Survey at Taft, California.

(Sgd.) ROY O. WEST,
Secretary of the Interior.

January 24, 1929.



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The Fastest Pipe Machine

½ inch pipe threaded in 13 seconds, 1 inch in 16 seconds, 2 inch in 30 seconds and ½ inch pipe cut off in 8 seconds, 1 inch in 10 seconds, 2 inch in 15 seconds—actual working figures that can be reproduced regularly with the "TOLEDO" No. 1000M pipe machine. Instant change from cutting to threading and vice versa, instant change from one size dies to another—these are a few of the many advantages of this remarkable pipe machine for cutting, threading and reaming ½ inch to 2 inch pipe.

One of these machines will soon pay for itself wherever small pipe up to 2 inch is cut and threaded. Hundreds are in use, and hundreds giving remarkably efficient service to their owners. A post card brings you complete information.

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THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO

High Pressure Separators

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Apartado 324,
Maracaibo, Venezuela

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for December

Runs

Company—	Month bbls.	Dly. av. bbls.
Prairie P. L. Co.*	4,696,500	151,500
Gulf P. L. Co.	1,379,159	44,489
Texas P. L. Co.	1,020,588	32,922
Magnolia P. L. Co.	2,291,282	73,912
Empire P. L. Co.	976,748	31,508
Cosden P. L. Co.	888,912	28,674
Sinclair P. L. Co.*	3,295,300	106,300
Oklahoma P. L. Co.	3,333,998	107,548
Other lines	7,533,000	243,000
Total December	25,415,487	819,853
Total November	25,052,782	835,092
Difference	362,705	15,239

Shipments

Prairie P. L. Co.†	5,985,263	193,073
Gulf P. L. Co.	1,656,721	53,443
Texas P. L. Co.	1,093,308	35,268
Magnolia Pet. Co.	2,105,278	67,848
Empire P. L. Co.	763,096	24,616
Cosden P. L. Co.	798,847	25,769
Sinclair P. L. Co.†	3,421,101	110,359
Oklahoma P. L. Co.	3,144,586	101,438
Other lines	7,440,000	240,000
Total December	26,406,200	851,814
Total November	25,809,577	860,315
Difference	596,623	8,501

Stocks

Prairie O. & G. Co.	31,825,000
Prairie P. L. Co.	2,750,000
Gulf P. L. and Gypsy Oil Cos.	9,832,133
The Texas Company	7,824,740
Magnolia Pet. Co.	9,463,184
Empire P. L. Co.	3,866,000
Mid-Continent Pet. Corp.	3,713,339
Carter Oil Co.	12,111,702
Oklahoma P. L. Co.	3,206,717
Sinclair Crude Oil Pur. Co.	20,630,000
Other lines	11,700,000
Total December	116,940,815
Total November	116,225,310
Difference	715,505

*Estimated. †Prairie and Sinclair shipments include Kansas, Oklahoma and Texas crude oil.

Note—Stocks do not include approximately 8,000,000 bbls. held in storage on private tank farms and leases.

EASTERN PIPE LINE REPORT

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for November and December:

	Nov.,'28	Dec.,'28
Nat. Transit	149,632.58	145,961.90
S. W. Pa. P. L.	88,351.54	90,632.07
Eureka P. L.	340,150.08	334,400.38
Buckeye P. L. (Macksburg)	324,323.38	321,746.10
Buckeye P. L. (Cleveland)	9,969.20	11,670.01
Buckeye P. L. (Lima, etc.)	95,741.92	102,544.02
Indiana P. L.	5,045.26	5,869.25
Cumberland P. L.	200,252.82	198,838.68
N. Y. Transit	26,096.56	26,551.67
Tidewater P. L.	213,822.88	222,437.71
Pure Oil	63,222.62	58,931.42
Emery P. L.	59,915.74	62,842.83
Paragon Dev.	21,546.52	21,324.31
Stoll Oil Ref.	8,888.14	9,023.98
Total	1,606,958.54	1,612,774.33
Daily average	53,565.15	52,024.98

Note—Indian Refining Co. also reported other receipts of 247,724.51 bbls. Paragon Refining Co. had other receipts of 194,077.16 bbls. Paragon Development had other receipts of 482.14 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio and Kentucky for November and December:

	Nov.,'28	Dec.,'28
Nat. Transit	581,552.73	565,441.11
S. W. Pa. P. L.	453,348.05	472,797.78
Eureka P. L.	233,597.31	218,228.06
Buckeye P. L. (Macksburg)	104,175.67	163,839.57
Buckeye P. L. (Cleveland)	1,942.41	2,189.40
Buckeye P. L. (Lima, etc.)	1,432,776.49	1,389,409.84
Indiana P. L.	1,380,185.20	1,426,008.91
Cumberland P. L.	182,624.70	215,190.79
Southern P. L.	.....	39,859.78
N. Y. Transit	232,023.71	189,477.21
Northern P. L.	240,489.16	173,728.49
Tidewater P. L.	181,613.37	184,601.11
Pure Oil	63,566.49	62,743.21
Emery P. L.	59,668.23	60,747.88
Indian Ref.	159,377.75	195,558.59
Paragon Dev.	.....	21,911.78
Total	5,306,941.28	5,381,735.51
Daily average	176,898.04	173,672.05

Indian Refining Co. reported other deliveries of 339,546.09 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of November and December:

	Nov.,'28	Dec.,'28
Nat. Transit	937,788.09	863,001.46
S. W. Pa. P. L.	548,202.29	429,283.61
Eureka P. L.	1,119,157.14	1,166,151.69
Buckeye P. L. (Macksburg)	565,202.83	558,828.02
Buckeye P. L. (Cleveland)	29,807.45	33,233.02
Buckeye P. L. (Lima, etc.)	2,745,636.88	2,326,759.46
Indiana P. L.	542,471.12	503,036.50
Cumberland P. L.	520,634.29	504,540.79
Southern P. L.	374,083.37	380,167.89
N. Y. Transit	403,009.35	307,858.74
Northern P. L.	381,904.17	367,722.48
Pure Oil	14,711.72	11,641.89
Emery P. L.	12,163.12	13,422.06
Paragon Ref.	22,875.49	21,092.45
Indian Ref.	142,492.29	46,060.23
Paragon Dev.	6,413.78	6,754.88
Total	8,366,553.38	7,539,555.17
Decrease	863,155.73	826,998.21

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of November and December, showing the gross stocks of the above fields:

	Nov.,'28	Dec.,'28
Pennsylvania	3,045,588.44	2,927,780.85
Lima	793,424.06	734,379.46
Kentucky	767,197.74	722,193.76
Mid-Continent	3,605,501.13	3,118,706.55
Illinois	154,842.01	36,469.55
Total	8,366,553.38	7,539,555.17

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1925	1926	1927	1928
January	56,831	55,630	56,209	52,904
February	60,606	60,394	61,298	57,002
March	60,575	61,644	63,247	57,485
April	63,062	63,019	60,337	56,812
May	59,217	60,580	59,284	52,067
June	61,270	61,131	62,757	58,220
July	62,639	63,206	58,674	57,144
August	69,686	61,815	60,870	57,745
September	62,510	64,639	60,285	53,487
October	145,388	161,132	147,036	58,100
November	59,350	61,774	57,275	53,565
December	57,974	58,755	53,089	52,025

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1925	1926	1927	1928
January	157,889	156,056	141,227	146,465
February	160,863	159,488	138,534	167,368
March	154,591	150,239	133,777	158,883
April	151,429	152,371	140,227	172,935
May	146,995	160,998	144,594	180,559
June	149,467	160,257	149,772	188,034
July	161,338	160,046	151,850	189,470
August	161,730	151,929	188,653	192,853
September	156,719	158,915	144,213	194,138
October	145,388	161,132	147,036	176,000
November	143,583	152,608	150,975	176,898
December	150,162	136,428	144,504	173,572

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1926	1927	1928
January	9,859,170	9,718,008	12,276,7
February	9,579,354	10,119,162	12,180,4
March	9,438,292	10,794,044	12,230,7
April	9,805,851	11,112,395	11,746,1
May	9,631,757	11,359,381	11,662,4
June	9,585,904	11,493,673	11,397,0
July	9,734,687	11,458,128	10,919,2
August	9,058,947	11,989,115	10,336,7
Septemebr	9,436,732	12,212,716	9,906,1
October	9,269,806	12,047,661	9,223,7
November	9,257,067	11,939,740	8,366,5
December	9,454,512	12,340,297	7,539,5

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and no counted in the stocks and averages reported above:

1927—	Runs	Shipments	Stocks
November	2,746.50	2,226.52	31,472.8
December	2,779.86	1,803.69	32,368.7
1928—			
January	1,886.06	2,424.79	31,829.9
February	2,460.14	3,109.34	31,176.7
March	2,578.86	3,540.33	30,289.2
June	3,153.08	2,779.02	17,993.8
July	2,902.50	3,628.02	17,197.9
August	2,874.11	2,350.13	17,721.9
September	2,820.31	5,255.42	15,286.8
October	1,289.93	538.89	17,561.0
November	2,663.53	733.47	19,436.9

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, January 1	2,288,563.0
Runs from wells	558,361.3
Other receipts	403,608.8
Regular deliveries	463,071.3
Other deliveries	364,643.0

The amount of Illinois oil run by the Tidewater Pipe Co. in December was 35,771.14 bbls. Deliveries were 33,446.91. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1927—		
November	605,621.14	415,155.9
December	577,321.26	397,176.0
1928—		
January	561,759.57	434,147.8
February	573,619.78	456,217.3
March	725,250.82	520,596.0
April	526,013.13	443,223.6
May	632,968.64	522,906.3
June	608,552.49	525,607.3
July	612,286.49	545,675.2
August	629,074.85	571,854.0
September	570,307.91	737,295.0
October	626,147.64	626,394.0
November	576,332.88	702,591.8

Tidewater Pipe Co., Ltd., also delivered in December 85,055.56 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS						
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Port Arthur Baton Rouge Sabine Pass		Tampa	Total	Total all ports
July	19,807	2,903	8,774	20,419	2,452	54,355	.....	.....	.....	.....	.....	54,355
August	18,161	3,613	27,774	17,677	2,419	69,645	.....	.....	.....	.....	806	70,451
September	11,100	.....	18,967	38,200	6,700	74,967	.....	.....	.....	.....	.....	74,967
October	17,322	.....	11,807	6,483	.....	.....	.....	.....	.....	.....	.....	35,612
November	21,333	5,200	25,400	18,200	7,100	77,233	.....	.....	.....	.....	1,000	78,233
December	4,968	2,968	24,678	18,806	3,064	54,484	.....	.....	.....	.....	2,419	56,903

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					Total all ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Port Arthur Baton Rouge	Sabine Pass	Tampa	Total	
July	23,484	14,548	111,903	37,678	21,452	209,065	9,355	25,000	.....	774	35,129	244,194
August	25,290	16,323	123,226	31,613	7,194	193,646	.....	38,677	.....	613	39,290	233,936
September	22,933	19,100	110,467	30,700	14,333	197,533	6,367	41,300	6,333	1,667	55,667	253,200
October	20,161	16,839	128,452	27,710	7,098	200,258	.....	32,226	3,065	1,612	36,903	237,161
November	18,400	16,033	133,700	30,267	8,432	206,833	1,333	37,167	4,633	.....	43,133	249,966
December	15,419	15,968	140,871	42,323	8,709	223,290	2,903	35,129	2,355	.....	40,387	263,677

GROSS PRODUCTION IN UNITED STATES FOR 12 MONTHS (Revised)

(In barrels of 42 gallons)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
January:	Month	19,028,228	20,978,320	20,060,311	3,319,325	2,791,922	1,807,061	2,429,375	3,134,000	73,548,5
	Daily average	613,814	676,720	647,107	107,075	90,061	58,292	78,367	101,097	2,372,5
February:	Month	18,038,459	19,294,426	19,678,396	3,079,887	2,571,575	1,734,207	2,230,887	3,166,000	69,792,8
	Daily average	622,016	665,324	678,565	106,203	88,676	59,800	76,927	109,172	2,406,6
March:	Month	19,118,324	20,162,524	21,542,865	3,379,031	2,687,948	1,866,106	2,401,911	3,522,000	74,680,7
	Daily average	616,720	650,404	694,931	109,001	86,708	60,197	77,481	113,613	2,408,0
April:	Month	18,280,729	19,096,920	21,876,913	3,412,260	2,472,600	1,912,187	2,370,810	3,231,000	72,653,4
	Daily average	609,357	636,564	729,230	113,742	82,420	63,740	79,027	107,700	2,421,7
May:	Month	19,331,866	19,443,355	21,220,046	3,367,809	2,843,847	1,926,026	2,525,043	3,619,000	74,276,9
	Daily average	623,609	627,205	684,518	108,639	91,737	62,130	81,447	116,742	2,396,6
June:	Month	19,164,244	18,482,981	19,877,936	3,202,050	3,075,911	2,074,422	2,425,470	3,401,000	71,704,0
	Daily average	638,808	616,099	662,598	106,735	102,530	69,147	80,849	113,367	2,390,1
July:	Month	19,754,458	18,809,188	22,055,737	3,171,548	2,792,139	2,238,090	2,492,586	3,487,000	74,800,7
	Daily average	637,241	606,748	711,475	102,308	90,069	72,131	80,406	112,484	2,413,9
August:	Month	19,444,899	20,840,804	22,339,131	3,147,058	2,711,787	1,989,264	2,561,840	3,556,000	76,590,7
	Daily average	627,255	672,284	720,448	101,518	87,477	64,170	82,640	114,709	2,470,6
September:	Month	18,908,169	22,456,860	21,554,269	3,047,250	2,540,070	1,830,225	2,432,430	3,229,000	75,998,2
	Daily average	630,272	748,562	718,207	101,575	84,669	61,007	81,047	104,300	2,533,2
October:	Month	19,430,992	23,431,071	22,176,853	3,058,460	2,652,484	1,836,221	2,571,822	3,612,000	78,769,8
	Daily average	626,806	755,841	715,376	98,660	85,564	59,233	82,962	116,516	2,540,9
November:	Month	19,907,526	22,078,680	20,791,798	2,977,800	2,476,080	1,801,914	2,388,870	3,348,000	75,770,6
	Daily average	663,584	735,956	693,059	99,260	82,536	60,064	79,629	111,600	2,525,6
December:	Month	21,574,703	22,425,722	22,180,102	2,988,400	2,521,571	1,846,841	2,289,040	3,581,000	79,407,3
	Daily average	695,958	723,410	715,487	96,400	81,341	59,576	73,840	115,516	2,561,0
	Total 12 months	231,982,597	247,500,851	255,354,357	38,150,878	32,137,934	22,862,564	29,120,084	40,886,000	897,995,3
	Daily average	633,832	676,232	697,690	104,237	87,809	62,466	79,563	111,710	2,453,1